Запись 1 из 34

Название: Possible generation mechanisms for Pc1 pearl structures in the ionosphere based on 6 years of ground observations in Canada, Russia, and Japan

Авторы: Jun, CW (Jun, Chae-Woo); Shiokawa, K (Shiokawa, Kazuo); Connors, M (Connors, Martin); Schofield, I (Schofield, Ian); Poddelsky, I (Poddelsky, Igor); Shevtsov, B (Shevtsov, Boris)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 121 **Выпуск:** 5 **Стр.:** 4409-4424 **DOI:** 10.1002/2015JA022123 **Опубликовано:** MAY 2016

Аннотация: We investigate pearl structures (amplitude modulations) of Pc1 pulsations simultaneously observed at Athabasca (ATH, 54.7 degrees N, 246.7 degrees E, L = 4.3) in Canada, Magadan (MGD, 60.1 degrees N, 150.7 degrees E, L = 2.6) in Russia, and Moshiri (MOS, 44.4 degrees N, 142.3 degrees E, L = 1.5) in Japan. From 6years of ground observations, from 2008 to 2013, we selected 84 Pc1 events observed simultaneously at the longitudinally separated stations (ATH and MGD) and 370 events observed at the latitudinally separated stations (MGD and MOS), all with high coherence (>0.7) of Pc1 waveforms. We calculated the cross-correlation coefficient (similarity: r) for the Pc1 pearl structures and found that more than half of the events in both pairs had low similarity ($r < 0.7$), indicating that most Pc1 waves exhibit different pearl structures at different stations. We found that high-similarity Pc1 pearl structures ($r > 0.7$) at the longitudinally separated stations are concentrated from 6 to 15 UT when both stations are in the nighttime. The similarity of Pc1 pearl structures tends to show a negative correlation with the standard deviation of the polarization angle in both pairs. The observed repetition period of Pc1 pearl structures has a clear positive correlation with the repetition period estimated from Pc1 bandwidth by assuming beating of different frequencies. From these results, we suggest that ionospheric beating effect could be a dominant process for the generation of Pc1 pearl structures. Beating processes in the ionosphere with a spatially distributed ionospheric source can cause the different shapes of Pc1 pearl structures at different observation points during ionospheric duct propagation.

Идентификационный номер: WOS:000380025500038

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Запись 2 из 34

Название: Lightning and electrical activity during the Shiveluch volcano eruption on 16 November 2014

Авторы: Shevtsov, BM (Shevtsov, Boris M.); Firstov, PP (Firstov, Pavel P.); Cherneva, NV (Cherneva, Nina V.); Holzworth, RH (Holzworth, Robert H.); Akbashev, RR (Akbashev, Renat R.)

Источник: NATURAL HAZARDS AND EARTH SYSTEM SCIENCES **Том:** 16 **Выпуск:** 3 **Стр.:** 871-874 **DOI:** 10.5194/nhess-16-871-2016 **Опубликовано:** 2016

Аннотация: According to World Wide Lightning Location Network (WWLLN) data, a sequence of lightning discharges was detected which occurred in the area of the explosive eruption of Shiveluch volcano on 16 November 2014 in Kamchatka. Information on the ash cloud motion was confirmed by the measurements of atmospheric electricity, satellite observations and meteorological and seismic data. It was concluded that WWLLN resolution is enough to detect the earlier stage of volcanic explosive eruption when electrification processes develop the most intensively. The lightning method has the undeniable advantage for the fast remote sensing of volcanic electric activity anywhere in the world. There is a good opportunity for the development of WWLLN technology to observe explosive volcanic eruptions.

Идентификационный номер: WOS:000377610300014

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Запись 3 из 34

Название: Pi2 pulsations observed around the dawn terminator

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Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 120 **Выпуск:** 3 **Стр.:** 2088-2098 **DOI:** 10.1002/2013JA019691 **Опубликовано:** MAR 2015

Аннотация: We examined Pi2 pulsations observed simultaneously at low-latitude stations (L = 1.15 - 2.33) around the dawn terminator. Those Pi2 pulsations observed in the sunlit region were polarized in the azimuthal (D, positive eastward) direction. We found that the D component oscillations in the dark and sunlit regions were in antiphase, whereas the H component oscillated in phase. A statistical analysis indicates that these D component phase reversals occurred about 0.5 h sunward of the dawn terminator at100 km in altitude, corresponding to the highly conducting E layer. The azimuthal polarization and D component phase reversals related to the dawn terminator cannot be explained by the existing models of low-latitude Pi2s (e.g., cavity resonance or substorm current wedge oscillations). Similar D component phase reversals were also found on the dusk side although the amplitude of the D component is smaller than that of the H component. We suggest that the meridional ionospheric current in the sunlit region adjacent to the dawn terminator drives the D component oscillations in antiphase with those D oscillations produced by the oscillatory field-aligned current (FAC) on the postmidnight side. The meridional current is expected to form a part of a current system that extends from the postmidnight FAC to the equatorial Cowling current. The D component oscillations in the Northern and Southern Hemispheres are also in antiphase, indicating that the current system is symmetric with respect to the equator.

Идентификационный номер: WOS:000353237600041

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Запись 4 из 34

Название: Relation of tropical cyclone structure with thundersorm activity

Авторы: Shevtsov, BM (Shevtsov, B. M.); Permyakov, MS (Permyakov, M. S.); Potalova, EY (Potalova, E. Yu.); Cherneva, NV (Cherneva, N. V.); Holzworth, R (Holzworth, Robert)

Отредактировано: Matvienko GG; Romanovskii OA

Источник: 21ST INTERNATIONAL SYMPOSIUM ON ATMOSPHERIC AND OCEAN OPTICS: ATMOSPHERIC PHYSICS **Серия книг:** Proceedings of SPIE **Том:** 9680 **Номер статьи:** 96805B **DOI:** 10.1117/12.2203348 **Опубликовано:** 2015

Аннотация: Synoptic and mesoscale cyclone systems over an ocean and seas are often accompanied by thunderstorm activity, which intensity and spatial distribution are modulated by the dynamic structure of these systems. The paper considers a method connecting the parameters of this thunderstorm activity with weather system structures over oceans and seas with mesoscale formation intensities and forms in these systems determined by driving wind vortex fields of scatterometers and by satellite images in visible and infrared ranges. On the example of separate tropical cyclones (TC) of 2005-2013, the relation of lightning discharge frequency and density in the TC area of influence and spatial distribution of driving wind vortex is shown. The work was supported by the Russian-American Grant RUG1-7084-PA-13 in the area of fundamental researches of FEB RAS and CRDF.

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Название конференции: 21st International Symposium On Atmospheric and Ocean Optics - Atmospheric Physics

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Место проведения конференции: Tomsk, RUSSIA

Спонсоры конференции: V E Zuev Inst Atmospher Opt SB RAS, Inst Solar Terrestrial Phys SB RAS, Russian Fdn Basic Res, Russian Acad Sci, Siberian Branch

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Запись 5 из 34

Название: Study of Pc1 pearl structures observed at multi-point ground stations in Russia, Japan, and Canada

Авторы: Jun, CW (Jun, Chae-Woo); Shiokawa, K (Shiokawa, Kazuo); Connors, M (Connors, Martin); Schofield, I (Schofield, Ian); Poddelsky, I (Poddelsky, Igor); Shevtsov, B (Shevtsov, Boris)

Источник: EARTH PLANETS AND SPACE **Том:** 66 **Номер статьи:** 140 **DOI:** 10.1186/s40623-014-0140-8 **Опубликовано:** OCT 23 2014

Аннотация: We investigate possible generation mechanisms of Pc1 pearl structures using multi-point induction magnetometers in Athabasca in Canada, Magadan in Russia, and Moshiri in Japan. We selected two Pc1 pulsations that were simultaneously observed at the three stations and applied a polarization analysis. In case 1, on 8 April 2010, Pc1 pearl structures were slightly different in some time intervals at different stations, and their polarization angles varied depending on the frequencies at the three stations. Case 2, on 11 April 2010, showed Pc1 pearl structures that were similar at different stations, and their polarization angle was independent of frequency at all three stations. In order to understand these differences, we performed two simple model calculations of Pc1 pearl structures under different conditions. The first model assumes that Pc1 waves propagated from a latitudinally extended source with different frequencies at different latitudes to the observation points, representing beating of these waves in the ionosphere. The second model considers Pc1 waves for which different frequencies are mixed at a point source to cause the beating at the source point, indicating that the Pc1 pearl structures are generated in the magnetosphere. The first model shows slightly different waveforms at different stations. In contrast, the second model shows identical waveforms at different stations. From these results, we conclude that, in case 1, Pc1 pearl structures were caused by beating in the ionosphere. On the other hand, in case 2, they were the result of magnetospheric effects. We suggest that beating processes in the ionosphere could be one of the generation mechanisms of Pc1 pearl structures.

Идентификационный номер: WOS:000344528800001

ISSN: 1880-5981

Запись 6 из 34

Название: A tailward moving current sheet normal magnetic field front followed by an earthward moving dipolarization front

Авторы: Hwang, KJ (Hwang, K-J); Goldstein, ML (Goldstein, M. L.); Moore, TE (Moore, T. E.); Walsh, BM (Walsh, B. M.); Baishev, DG (Baishev, D. G.); Moiseyev, AV (Moiseyev, A. V.); Shevtsov, BM (Shevtsov, B. M.); Yumoto, K (Yumoto, K.)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 119 **Выпуск:** 7 **Стр.:** 5316-5327 **DOI:** 10.1002/2013JA019657 **Опубликовано:** JUL 2014

Аннотация: A case study is presented using measurements from the Cluster spacecraft and ground-based magnetometers that show a substorm onset propagating from the inner to outer plasma sheet. On 3 October 2005, Cluster, traversing an ion-scale current sheet at the near-Earth plasma sheet, detected a sudden enhancement of B-z, which was immediately followed by a series of flux rope structures. Both the local B-z enhancement and flux ropes propagated tailward. Approximately 5 min later, another B-z enhancement, followed by a large density decrease, was observed to rapidly propagate earthward. Between the two B-z enhancements, a significant removal of magnetic flux occurred, possibly resulting from the tailward moving B-z enhancement and flux ropes. In our scenario, this flux removal caused the magnetotail to be globally stretched so that the thinnest sheet formed tailward of Cluster. The thinned current sheet facilitated magnetic reconnection that quickly evolved from plasma sheet to lobe and generated the later earthward moving dipolarization front (DF) followed by a reduction in density and entropy. Ground magnetograms located near the meridian of Cluster's magnetic foot points show two-step bay enhancements. The positive bay associated with the first B-z enhancement indicates that the substorm onset signatures propagated from the inner to the outer plasma sheet, consistent with the Cluster observation. The more intense bay features associated with the later DF are consistent with the earthward motion of the front. The event suggests that current disruption signatures that originated in the near-Earth current sheet propagated tailward, triggering or facilitating midtail reconnection, thereby preconditioning the magnetosphere for a later strong substorm enhancement.

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Запись 7 из 34

Название: Analysis of the structure of acoustic emission signals of the audible range by the sparse approximation method

Авторы: Marapulets, YV (Marapulets, Yu. V.); Tristanov, AB (Tristanov, A. B.); Shevtsov, BM (Shevtsov, B. M.)

Источник: ACOUSTICAL PHYSICS **Том:** 60 **Выпуск:** 4 **Стр.:** 427-435 **DOI:** 10.1134/S1063771014040083 **Опубликовано:** JUL 2014

Аннотация: A new approach for the time-frequency analysis of acoustic emission of the audible frequency range is proposed. The approach is based on the sparse approximation method. A basis dictionary based on Berlage functions is constructed with allowance for the characteristics of geoacoustic signals. It is shown that application of the developed method in analyzing real data makes it possible to reveal the internal geoacoustic pulse structure caused by the features of their sources. The results can be used for diagnosing deformation processes in natural media.

Идентификационный номер: WOS:000339380800009

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Запись 8 из 34

Название: Time-frequency analysis of sound range acoustic emission by the sparse approximation method

Авторы: Marapulets, YV (Marapulets, Yu V.); Tristanov, AB (Tristanov, A. B.); Shevtsov, BM (Shevtsov, B. M.)

Источник: DOKLADY EARTH SCIENCES **Том:** 456 **Выпуск:** 2 **Стр.:** 705-708 **DOI:** 10.1134/S1028334X14060178 **Опубликовано:** JUN 2014

Идентификационный номер: WOS:000339009000016

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Запись 9 из 34

Название: Analysis of whistler rates in connection with lightning activity change in the world lightning centers

Авторы: Shevtsov, BM (Shevtsov, B. M.); Cherneva, NV (Cherneva, N. V.); Vodinchar, GM (Vodinchar, G. M.)

Отредактировано: Matvienko GG; Romanovski OA

Источник: 20TH INTERNATIONAL SYMPOSIUM ON ATMOSPHERIC AND OCEAN OPTICS: ATMOSPHERIC PHYSICS **Серия книг:** Proceedings of SPIE **Том:** 9292 **Номер статьи:** 92924Q **DOI:** 10.1117/12.2074421 **Опубликовано:** 2014

Аннотация: Data on March 2013 were used to verify the theory of whistler propagation along a magnetic field tube, from which the recorded whistlers are expected to be associated with lightning discharges in Kamchatka and in magnetically conjugate point in Australia. When comparing the whistler rates recorded at AWDANet station in Kamchatka with lightning discharge rates according to the data of the World Wide Lightning Location Network, it was determined that the intensity highest values are associated with lightning in magnetically conjugate points. At the same time there were some small splashes in the intensity which clearly correlated with the activity of American and African sources. Some splashes may be associated with the activity in all thee sources in America, Africa and Indonesia.

Идентификационный номер: WOS:000349379600170

Название конференции: 20th International Symposium on Atmospheric and Ocean Optics - Atmospheric Physics

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Место проведения конференции: Novosibirsk, RUSSIA

Спонсоры конференции: V E Zuev Inst Atmospher Opt, V V Voevodsky Inst Chem Kinet & Combust, Inst Solar Terrestrial Phys, Russian Fdn Basic Res, Russian Acad Sci, Siberian Branch

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Запись 10 из 34

Название: Features of the Earth surface deformations in the Kamchatka peninsula and their relation to geoacoustic emission

Авторы: Larionov, IA (Larionov, I. A.); Marapulets, YV (Marapulets, Y. V.); Shevtsov, BM (Shevtsov, B. M.)

Источник: SOLID EARTH **Том:** 5 **Выпуск:** 2 **Стр.:** 1293-1300 **DOI:** 10.5194/se-5-1293-2014 **Опубликовано:** 2014

Аннотация: The paper presents the results of investigations of deformation processes in the near-surface sedimentary rocks, which have been carried out in a seismically active region of the Kamchatka peninsula since 2007. The peculiarity of the experiments on registration of geodeformations is the application of a laser strainmeter-interferometer constructed according to the Michelson interferometer scheme. Besides rock deformations, geoacoustic emission in the frequency range from several hertz to the first tens of kilohertz is under investigation. Piezoceramic hydrophones installed in artificial water reservoirs are applied. It is shown that periods of primary rock compression and tension with a duration of up to several months are distinguished in the geodeformation process at the observation site. During the direction change in the deformations, when the geodeformation process rate grows, an increase in geoacoustic radiation is observed.

Идентификационный номер: WOS:000347545800048

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Запись 11 из 34

Название: Nonstationary reflections of waves in media with fractal dispersion

Авторы: Perezhogin, AS (Perezhogin, A. S.); Shevtsov, BM (Shevtsov, B. M.)

Источник: JOURNAL OF COMMUNICATIONS TECHNOLOGY AND ELECTRONICS **Том:** 59 **Выпуск:** 1 **Стр.:** 40-46 **DOI:** 10.1134/S1064226914010100 **Опубликовано:** JAN 2014

Аннотация: Numerical and analytical solutions to the problem of wave reflection in a one-dimensional medium with fractal frequency dispersion have been obtained by using the invariant-immersion method with the multiple-scattering and long-term-memory effects taken into account. As the characteristics of the medium, the solutions to the equations of the fractional relaxator and oscillator are used. The specific features of the reflections are considered for various fractal-dispersion properties. The applicability of the obtained solutions to the diagnostic of dielectrics, plasma, and elastic bodies is discussed.

Идентификационный номер: WOS:000330733400005

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Запись 12 из 34

Название: Geoacoustic emission response to deformation processes activation during earthquake preparation

Авторы: Marapulets, YV (Marapulets, Yu. V.); Shevtsov, BM (Shevtsov, B. M.); Larionov, IA (Larionov, I. A.); Mishchenko, MA (Mishchenko, M. A.); Shcherbina, AO (Shcherbina, A. O.); Solodchuk, AA (Solodchuk, A. A.)

Источник: RUSSIAN JOURNAL OF PACIFIC GEOLOGY **Том:** 6 **Выпуск:** 6 **Стр.:** 457-464 **DOI:** 10.1134/S1819714012060048 **Опубликовано:** NOV 2012

Аннотация: The results of geoacoustic emission investigations carried out on the seismoactive Kamchatka Peninsula since 1999 are presented. The experiments are characterized by the application of broadband piezoceramic sound receivers (hydrophones) for recording the emission. The hydrophones were installed at the bottom of natural and artificial water reservoirs. As compared with the standard hydrophones, such receivers allow us to broaden the registration frequency range up to 0.1 Hz-11 kHz. Three-component vector receivers with the same frequency range were used simultaneously to study the spatial structure of the geoacoustic emission and the mode of the medium particle movement in a wave. In the course of the investigations, it was established that anomalies of the geoacoustic emission in the kilohertz frequency range are recorded 1-3 days before strong earthquakes at a distance of a few hundred kilometers from the epicenter. A sharp increase in the amplitude and frequency of the geoacoustic impulses, which resemble microearthquakes in pattern and last from tens of minutes to several hours, is interpreted as an anomaly. Signals at such frequencies cannot propagate from the epicenters of preparing earthquakes and represent the response of the medium at the registration point to the change of its stress-strain state. The stress field created therein determines the primary orientation of the emission sources, which can be assessed by vector-phase methods. The results of the integrated investigations of the geoacoustic emission and the Earth's surface deformation revealed that anomalies are observed before earthquakes with a considerable increase in the strain rate during both the compression and extension of the near-surface rocks.

Идентификационный номер: WOS:000312665500007

ISSN: 1819-7140

Запись 13 из 34

Название: Dynamics of lidar reflections of the Kamchatka upper atmosphere and its connection with phenomena in the ionosphere

Авторы: Bychkov, VV (Bychkov, V. V.); Shevtsov, BM (Shevtsov, B. M.)

Источник: GEOMAGNETISM AND AERONOMY **Том:** 52 **Выпуск:** 6 **Стр.:** 797-804 **DOI:** 10.1134/S0016793212060047 **Опубликовано:** NOV 2012

Аннотация: The results of Rayleigh lidar sounding of the upper atmosphere over Kamchatka are analyzed in comparison with ionosonde data. A correlation between light backscattering signals at a wavelength of 532 nm and parameters determining the content of plasma in the nocturnal F2 layer of the ionosphere is found. Based on the performed analysis of lidar data and the geophysical situation, a hypothesis about the possible role of Rydberg atoms in the formation of lidar reflections at ionospheric heights is discussed.

Идентификационный номер: WOS:000311332200012

ISSN: 0016-7932

Запись 14 из 34

Название: Lidar observations and formation mechanism of the structure of stratospheric and mesospheric aerosol layers over Kamchatka

Авторы: Cheremisin, AA (Cheremisin, A. A.); Novikov, PV (Novikov, P. V.); Shnipov, IS (Shnipov, I. S.); Bychkov, VV (Bychkov, V. V.); Shevtsov, BM (Shevtsov, B. M.)

Источник: GEOMAGNETISM AND AERONOMY **Том:** 52 **Выпуск:** 5 **Стр.:** 653-663 **DOI:** 10.1134/S0016793212050027 **Опубликовано:** SEP 2012

Аннотация: Lidar observations during 2007-2008 in Kamchatka revealed aerosol layers in the upper stratosphere at heights of 35-50 km and in the mesosphere at heights of 60-75 km. It is well known that forces of gas-kinetic nature, i.e., photophoretic forces, act on aerosol particles that absorb solar radiation and terrestrial IR radiation; these forces can counteract the gravitational force and even lead to the levitation of these particles at particular heights. The accumulation of particles at these heights may lead to the formation of aerosol layers. We calculated these forces for the conditions of lidar observations in Kamchatka. Aerosol layers were observed at heights where particle levitation can occur. Thus, the stratospheric and mesospheric aerosol layers, detected at heights of 30-50 and 60-75 km, respectively, may be due to the effect of the photophoretic force on aerosol particles.

Идентификационный номер: WOS:000309230100010

ISSN: 0016-7932

Запись 15 из 34

Название: Magnetic local time and latitude dependence of amplitude of the main impulse (MI) of geomagnetic sudden commencements and its seasonal variation

Авторы: Shinbori, A (Shinbori, Atsuki); Tsuji, Y (Tsuji, Yuji); Kikuchi, T (Kikuchi, Takashi); Araki, T (Araki, Tohru); Ikeda, A (Ikeda, Akihiro); Uozumi, T (Uozumi, Teiji); Baishev, D (Baishev, Dmitry); Shevtsov, BM (Shevtsov, Boris M.); Nagatsuma, T (Nagatsuma, Tsutomu); Yumoto, K (Yumoto, Kiyohumi)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 117 **Номер статьи:** A08322 **DOI:** 10.1029/2012JA018006 **Опубликовано:** AUG 21 2012

Аннотация: The magnetic local time and latitude dependence of amplitude of the main impulse (MI) of geomagnetic sudden commencements (SCs) and its seasonal variation have been investigated using high time resolution (1-3 sec) geomagnetic data in the latitudinal range 27-70 degrees for the period 1996-2010. The daytime distribution of the SC-MI amplitude in the sub-auroral and middle latitudes (35-60 degrees) is similar to the DP-2 type geomagnetic variation which shows negative and positive changes in the morning and afternoon, respectively. The magnetic field variation is reversed around the magnetic latitude of 63-65 degrees. This suggests that a pair of field-aligned currents (FACs), resembling the region-1 (R-1) FACs, is located near the magnetic latitude of 63-65 degrees. The nighttime SC amplitude is enhanced significantly in the low and middle latitudes (27-60 degrees). The enhancement is due to the magnetic effect produced by the SC-MI FACs. In the nighttime auroral latitude (63-65 degrees), the SC amplitude decreases steeply due to the enhanced westward auroral electrojet associated with the compression of the magnetosphere. The size of the diurnal variation tends to increase significantly during the summer, compared with that during the winter. This seasonal variation suggests that the DP-2 type ionospheric currents (ICs) and FACs generated during the SC-MI phase are intensified by increased ionospheric conductivities during the summer. It can be concluded that the large-scale MI current system in the ionosphere and magnetosphere is voltage generator.

Идентификационный номер: WOS:000308005200004

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Запись 16 из 34

Название: A diffusion approach to the statistical analysis of Kamchatka Seismicity

Авторы: Shevtsov, BM (Shevtsov, B. M.); Sagitova, RN (Sagitova, R. N.)

Источник: JOURNAL OF VOLCANOLOGY AND SEISMOLOGY **Том:** 6 **Выпуск:** 2 **Стр.:** 116-125 **DOI:** 10.1134/S0742046312020054 **Опубликовано:** APR 2012

Аннотация: A diffusion approach was used to develop a statistical model of seismicity and to analyze Kamchatka earthquakes in order to detect features in the changes that are typical of random walk processes. We proposed a hypothesis of relationships among events and used an energy criterion to decompose the earth-quake catalog into a set of sequences, with each being a Brownian process with definite spatial, temporal, and energy scales. We constructed statistical distributions for these sequences over the number of their terms and total energies, as well as distributions of the sequences over distance, time, and flight times between events. We discuss non-local properties and memory effects in the random walk under different conditions.

Идентификационный номер: WOS:000303588100004

ISSN: 0742-0463

Запись 17 из 34

Название: An empirical model of the quiet daily geomagnetic field variation

Авторы: Yamazaki, Y (Yamazaki, Y.); Yumoto, K (Yumoto, K.); Cardinal, MG (Cardinal, M. G.); Fraser, BJ (Fraser, B. J.); Hattori, P (Hattori, P.); Kakinami, Y (Kakinami, Y.); Liu, JY (Liu, J. Y.); Lynn, KJW (Lynn, K. J. W.); Marshall, R (Marshall, R.); McNamara, D (McNamara, D.); Nagatsuma, T (Nagatsuma, T.); Nikiforov, VM (Nikiforov, V. M.); Otadoy, RE (Otadoy, R. E.); Ruhimat, M (Ruhimat, M.); Shevtsov, BM (Shevtsov, B. M.); Shiokawa, K (Shiokawa, K.); Abe, S (Abe, S.); Uozumi, T (Uozumi, T.); Yoshikawa, A (Yoshikawa, A.)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 116 **Номер статьи:** A10312 **DOI:** 10.1029/2011JA016487 **Опубликовано:** OCT 18 2011

Аннотация: An empirical model of the quiet daily geomagnetic field variation has been constructed based on geomagnetic data obtained from 21 stations along the 210 Magnetic Meridian of the Circum-pan Pacific Magnetometer Network (CPMN) from 1996 to 2007. Using the least squares fitting method for geomagnetically quiet days (Kp <= 2+), the quiet daily geomagnetic field variation at each station was described as a function of solar activity SA, day of year DOY, lunar age LA, and local time LT. After interpolation in latitude, the model can describe solar-activity dependence and seasonal dependence of solar quiet daily variations (S) and lunar quiet daily variations (L). We performed a spherical harmonic analysis (SHA) on these S and L variations to examine average characteristics of the equivalent external current systems. We found three particularly noteworthy results. First, the total current intensity of the S current system is largely controlled by solar activity while its focus position is not significantly affected by solar activity. Second, we found that seasonal variations of the S current intensity exhibit north-south asymmetry; the current intensity of the northern vortex shows a prominent annual variation while the southern vortex shows a clear semi-annual variation as well as annual variation. Thirdly, we found that the total intensity of the L current system changes depending on solar activity and season; seasonal variations of the L current intensity show an enhancement during the December solstice, independent of the level of solar activity.

Идентификационный номер: WOS:000296157800001

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ISSN: 0148-0227

Запись 18 из 34

Название: Seasonal features of the appearance of aerosol scattering in the stratosphere and mesosphere of Kamchatka from the results of lidar observations in 2007-2009

Авторы: Bychkov, VV (Bychkov, V. V.); Perezhogin, AS (Perezhogin, A. S.); Shevtsov, BM (Shevtsov, B. M.); Marichev, VN (Marichev, V. N.); Novikov, PV (Novikov, P. V.); Cheremisin, AA (Cheremisin, A. A.)

Источник: IZVESTIYA ATMOSPHERIC AND OCEANIC PHYSICS **Том:** 47 **Выпуск:** 5 **Стр.:** 603-609 **DOI:** 10.1134/S0001433811050033 **Опубликовано:** OCT 2011

Аннотация: The behavior of the vertical aerosol structure (profiles of the ratio of the coefficients of the backward total and molecular scattering) in the height interval 30-80 km is analyzed from the results of lidar observations in Kamchatka over the period from October 2007 through December 2009. The obtained data revealed a regular two-layer aerosol structure in this height range with the maxima of the ratio of the scattering coefficients in the upper stratosphere at heights 35-50 km and in the mesosphere at heights of 60-75 km, as well as a relation between seasonal variations in the aerosol stratification and the circumpolar vortex affecting dynamic processes in the atmosphere of midlatitudes. The procedure of including the aftereffect of the Hamamatsu-M8259-01 PEM, which influences the error in the calculation of the ratio of scattering coefficients, is described.

Идентификационный номер: WOS:000296091400006

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Запись 19 из 34

Название: AKR modulation and global Pi2 oscillation

Авторы: Uozumi, T (Uozumi, Teiji); Yumoto, K (Yumoto, K.); Tokunaga, T (Tokunaga, T.); Solovyev, SI (Solovyev, S. I.); Shevtsov, BM (Shevtsov, B. M.); Marshall, R (Marshall, R.); Liou, K (Liou, K.); Ohtani, S (Ohtani, S.); Abe, S (Abe, S.); Ikeda, A (Ikeda, A.); Kitamura, K (Kitamura, K.); Yoshikawa, A (Yoshikawa, A.); Kawano, H (Kawano, H.); Itonaga, M (Itonaga, M.)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 116 **Номер статьи:** A06214 **DOI:** 10.1029/2010JA016042 **Опубликовано:** JUN 23 2011

Аннотация: In this report we present a temporal relationship between ground Pi2 and auroral kilometric radiation (AKR). We analyzed six isolated substorm events, which were observed by the MAGDAS/CPMN ground magnetometer network and the plasma wave instrument onboard the Polar satellite. We found that the time derivative of the height-integrated AKR power and the ground Pi2 D component had the same periodicity and that the two were synchronized with each other. When the D component fluctuated with the same (opposite) polarity as the magnetic bay variation, the AKR power tended to increase (decrease) during the corresponding interval. An isolated substorm event (AE similar to 40 nT), which occurred around 10: 19 UT on 24 January1997, was selected for a detailed study. The behavior of the Pi2 event can be interpreted by the substorm current wedge (SCW) and Pi2 propagation models. It is confirmed that the midlatitude and high-latitude D component oscillations can be treated as a proxy of the SCW oscillations, whereas the H component oscillations exhibited some phase shifts by the propagation delay of the Pi2 waves. That is, the temporal relation between the time derivative of the AKR power and the ground Pi2 suggests that the height-integrated AKR power was modulated coherently with the SCW oscillations.

Идентификационный номер: WOS:000292152500001

Идентификаторы авторов:

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Yoshikawa, Akimasa	A-6142-2012	
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ISSN: 2169-9380

Запись 20 из 34

Название: Reexamination of the S-q-EEJ relationship based on extended magnetometer networks in the east Asian region

Авторы: Yamazaki, Y (Yamazaki, Y.); Yumoto, K (Yumoto, K.); Uozumi, T (Uozumi, T.); Abe, S (Abe, S.); Cardinal, MG (Cardinal, M. G.); McNamara, D (McNamara, D.); Marshall, R (Marshall, R.); Shevtsov, BM (Shevtsov, B. M.); Solovyev, SI (Solovyev, S. I.)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 115 **Номер статьи:** A09319 **DOI:** 10.1029/2010JA015339 **Опубликовано:** SEP 24 2010

Аннотация: We reexamined the daily S-q-equatorial electrojet (EEJ) relationship based on these extended magnetometer networks in the east Asian region: (1) the Circum-pan Pacific Magnetometer Network (CPMN), (2) the International Real-time Magnetic Observatory Network (INTERMAGNET), and (3) the World Data Center for Geomagnetism, Kyoto (WDC). Daily variations of the geomagnetic field for geomagnetically quiet days (Kp <= 2+) from 1996 to 2005 were analyzed. Noontime eastward S-q current intensities were estimated by latitudinally integrating the north-south component of the S-q field. The corresponding EEJ intensities were estimated from the daily geomagnetic field variations observed at Davao station (dip latitude of -0.84 deg). We discovered that these intensities of daily S-q and EEJ are well correlated on a long-term basis (r = 0.80). The dependences on the solar activity (as indicated by F10.7) and season (the day number) of S-q and EEJ variations were examined. It was demonstrated that both daily S-q and EEJ intensities are correlated to F10.7 with similar sensitivities. F10.7 is known to show similar variations with solar EUV radiation which causes ionization and heating of the ionosphere. For seasonal dependence, both daily S-q and EEJ intensities show predominant semiannual variations with similar spring-fall asymmetry. The effect of seasonal changes of the EUV flux into the low-latitude ionosphere is considered. Our results indicate that the daily values of S-q and EEJ react, in the same manner, to temporal changes of solar ionization and heating of the ionosphere.

Идентификационный номер: WOS:000282327400003

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ISSN: 0148-0227

Запись 21 из 34

Название: Relationship of high-frequency geoacoustic emission and electric field in the atmosphere in seismotectonic process

Авторы: Marapulets, YV (Marapulets, Yu. V.); Rulenko, OP (Rulenko, O. P.); Mishchenko, MA (Mishchenko, M. A.); Shevtsov, BM (Shevtsov, B. M.)

Источник: DOKLADY EARTH SCIENCES **Том:** 431 **Выпуск:** 1 **Стр.:** 361-364 **DOI:** 10.1134/S1028334X10030207 **Опубликовано:** MAR 2010

Аннотация: In July-October 2006 and 2007, combined measurements of geoacoustic emission in the range of 2.0-6.5 kHz, the electric field in the atmosphere near the ground, and meteorological values were carried out in Kamchatka. Using the nonparametric method of Spearman's correlation analysis, the relationship between their average hourly values was examined. After excluding results of bad weather (rain, strong and moderate wind, low atmospheric pressure), a highly important negative relation between disturbances in geoacoustic emission and the electric field were detected. Most probably, it was caused by amplification of the strain of near-surface sedimentary rocks at the observation point during a seismotectonic process. The revealed relation is evidence for another manifestation of the lithosphere's influence on surface atmosphere in a seismoactive region.

Идентификационный номер: WOS:000276506200020

ISSN: 1028-334X

Запись 22 из 34

Название: Phase relation between Pi2-associated ionospheric Doppler velocity and magnetic pulsations observed at a midlatitude MAGDAS station

Авторы: Ikeda, A (Ikeda, Akihiro); Yumoto, K (Yumoto, Kiyohumi); Uozumi, T (Uozumi, Teiji); Shinohara, M (Shinohara, Manabu); Nozaki, K (Nozaki, Kenro); Yoshikawa, A (Yoshikawa, Akimasa); Bychkov, VV (Bychkov, V. V.); Shevtsov, BM (Shevtsov, B. M.)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 115 **Номер статьи:** A02215 **DOI:** 10.1029/2009JA014397 **Опубликовано:** FEB 27 2010

Аннотация: We examined the correlation between nighttime Pi2 pulsations detected simultaneously by a frequency modulated continuous wave (FM-CW) (HF) radar and by a ground magnetometer, both located at a midlatitude (L = 2.05) Magnetic Data Acquisition System station. Eighty-three Pi2 events were observed during the 43 day period from 23 September 2006 to 4 November 2006. The variations of the ground magnetic H component and ionospheric Doppler velocity (V*) exhibited high coherence for 80% of the 83 Pi2 events, for about a half of which the H and V* variations have the same dominant frequency. For such events, V* led H by 90 degrees in phase, in the midnight sector of 2230-0300 LT. The average Ey (east-west electric field) amplitude derived from V* is 0.27 mV/m. The 90 degrees phase delay was not found for the five events that were observed near dusk and dawn. The phase relation of H and V* for Pi2s in the midnight sector may be explained in terms of the radial standing structure of compressional waves, i.e., cavity mode oscillation.

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Идентификаторы авторов:

Автор	Номер ResearcherID	Номер ORCID
Yoshikawa, Akimasa	A-6142-2012	

ISSN: 0148-0227

Запись 23 из 34

Название: Directionality of surface high-frequency geoacoustic emission during deformational disturbances

Авторы: Shevtsov, BM (Shevtsov, B. M.); Marapulets, YV (Marapulets, Yu. V.); Shcherbina, AO (Shcherbina, A. O.)

Источник: DOKLADY EARTH SCIENCES **Том:** 430 **Выпуск:** 1 **Стр.:** 67-70 **DOI:** 10.1134/S1028334X10010150 **Опубликовано:** JAN 2010

Аннотация: Changes in the directionality of surface high-frequency geoacoustic emission during periods of deformational disturbances on the diurnal time scale prior to strong seismic events on Kamchatka have been investigated. It has been shown that while the emission intensity grows by over an order of magnitude, sharp maxima appear in the direction of longitudinal acoustic oscillations. Based on their position, the orientation of the major compression axis can be determined, whose chaotic motion exhibits two metastable states around the direction to the epicenter of the earthquake.

Идентификационный номер: WOS:000274238800015

ISSN: 1028-334X

Запись 24 из 34

Название: The STEL induction magnetometer network for observation of high-frequency geomagnetic pulsations

Авторы: Shiokawa, K (Shiokawa, K.); Nomura, R (Nomura, R.); Sakaguchi, K (Sakaguchi, K.); Otsuka, Y (Otsuka, Y.); Hamaguchi, Y (Hamaguchi, Y.); Satoh, M (Satoh, M.); Katoh, Y (Katoh, Y.); Yamamoto, Y (Yamamoto, Y.); Shevtsov, BM (Shevtsov, B. M.); Smirnov, S (Smirnov, S.); Poddelsky, I (Poddelsky, I.); Connors, M (Connors, M.)

Источник: EARTH PLANETS AND SPACE **Том:** 62 **Выпуск:** 6 **Стр.:** 517-524 **DOI:** 10.5047/eps.2010.05.003 **Опубликовано:** 2010

Аннотация: The Solar-Terrestrial Environment Laboratory (STEL) induction magnetometer network has been developed to investigate the propagation characteristics of high-frequency geomagnetic pulsations in the Pc1 frequency range (0.2-5 Hz). Five induction magnetometers were installed in the period 2005-2008 at Athabasca in Canada, Magadan and Paratunka in Far East Russia, and Moshiri and Sata in Japan. The sensitivity of these magnetometers is between 0.3 and 13 V/nT at turnover frequencies of 1.7-5.5 Hz. GPS time pulses are used for accurate triggering of the 64-Hz data sampling. We show examples of PiB/Pc1 magnetic pulsations observed at these five stations, as well as the harmonic structure of ionospheric Alfven resonators observed at Moshiri. We found that the Pc1 packets are slightly modulated as they propagate from high to low latitudes in the ionospheric duct. These network observations are expected to contribute to our understanding of Pc1-range magnetic pulsations and their interaction with relativistic electrons by combining the obtained results with future satellite missions that observe radiation belt particles.

Идентификационный номер: WOS:000281546900003

ISSN: 1880-5981

Запись 25 из 34

Название: Stratospheric aerosol dynamics over Kamchatka and its association with geophysical processes

Авторы: Shevtsov, BM (Shevtsov, B. M.); Bychkov, VV (Bychkov, V. V.); Marichev, VN (Marichev, V. N.); Perezhogin, AS (Perezhogin, A. S.); Shumeiko, AV (Shumeiko, A. V.)

Источник: GEOMAGNETISM AND AERONOMY **Том:** 49 **Выпуск:** 8 **Стр.:** 1302-1304 **DOI:** 10.1134/S0016793209080568 **Опубликовано:** DEC 2009

Аннотация: The dynamics of aerosol layers in comparison with geomagnetic and ionospheric data has been studied based on the nighttime single-frequency lidar sounding of the atmosphere over Kamchatka at altitudes of 10 to 90 km. The relation of the aerosol density to solar, magnetic, and ionospheric activity has been studied, and the stratospheric aerosol formation mechanisms have been considered. It has been indicated that variations in the aerosol density correlate with radiowave absorption, perturbations of the ionospheric parameters, and geomagnetic characteristics. The spatial and time scales of aerosol layers have been estimated. The role of stratospheric aerosol as an indicator of geophysical processes is discussed.

Идентификационный номер: WOS:000273446200056

ISSN: 0016-7932

Запись 26 из 34

Название: Propagation characteristics of Pi 2 pulsations observed at high- and low-latitude MAGDAS/CPMN stations: A statistical study

Авторы: Uozumi, T (Uozumi, Teiji); Abe, S (Abe, S.); Kitamura, K (Kitamura, K.); Tokunaga, T (Tokunaga, T.); Yoshikawa, A (Yoshikawa, A.); Kawano, H (Kawano, H.); Marshall, R (Marshall, R.); Morris, RJ (Morris, R. J.); Shevtsov, BM (Shevtsov, B. M.); Solovyev, SI (Solovyev, S. I.); McNamara, DJ (McNamara, D. J.); Liou, K (Liou, K.); Ohtani, S (Ohtani, S.); Itonaga, M (Itonaga, M.); Yumoto, K (Yumoto, K.)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 114 **Номер статьи:** A11207 **DOI:** 10.1029/2009JA014163 **Опубликовано:** NOV 17 2009

Аннотация: The objective of this study is to understand better the propagation of Pi 2 waves in the nighttime region. We examined Pi 2 oscillations that showed high correlation between high- and low-latitude Magnetic Data Acquisition System/Circum Pan-Pacific Magnetometer Network stations (correlation coefficient: vertical bar gamma vertical bar >= 0.75). For each horizontal component (H and D) we examined the magnetic local time (MLT) dependence of the delay time of high-latitude Pi 2 oscillations that corresponds to the highest correlation with the low-latitude Pi 2 oscillation. We found the delay time of the high-latitude H showed remarkable MLT dependence, especially in the premidnight sector: we found that in the premidnight sector the high-latitude H oscillation tends to delay from the low-latitude oscillation (<100 s). On the other hand, the delay time of the high-latitude D oscillation was not significant (similar to +/- 10 s) in the entire nighttime sector. We propose a Pi 2 propagation model to explain the observed delay time of high-correlation high-latitude H. The model quantitatively explains the trend of the event distribution. We also examined the spatial distribution of high-correlation Pi 2 events relative to the center of auroral breakups. It was found that the high-correlation Pi 2 events tend to occur away from the center of auroral breakups by more than 1.5 MLT. The present result suggests that the high-correlation H component Pi 2 oscillations at high latitude are a manifestation of forced Alfven waves excited by fast magnetosonic waves.

Идентификационный номер: WOS:000272000700001

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ISSN: 2169-9380

Запись 27 из 34

Название: Coordinated observations of nighttime medium-scale traveling ionospheric disturbances in 630-nm airglow and HF radar echoes at midlatitudes

Авторы: Suzuki, S (Suzuki, S.); Hosokawa, K (Hosokawa, K.); Otsuka, Y (Otsuka, Y.); Shiokawa, K (Shiokawa, K.); Ogawa, T (Ogawa, T.); Nishitani, N (Nishitani, N.); Shibata, TF (Shibata, T. F.); Koustov, AV (Koustov, A. V.); Shevtsov, BM (Shevtsov, B. M.)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 114 **Номер статьи:** A07312 **DOI:** 10.1029/2008JA013963 **Опубликовано:** JUL 25 2009

Аннотация: We investigate nighttime medium-scale traveling ionospheric disturbances (MSTIDs) using the SuperDARN HF radar at Hokkaido, Japan (43.5 degrees N, 143.6 degrees E), and an OI 630-nm airglow imager located at Paratunka, Russia (53.0 degrees N, 158.2 degrees E), within the radar field of view. The imager identified southwestward propagating MSTIDs with a horizontal wavelength of similar to 300 km on 8 December 2007. Throughout this event, the radar continuously detected ionospheric echoes originating from decameter-scale field-aligned irregularities (FAIs) at the F region heights. The Doppler velocities of these echoes showed systematic polarity changes which were consistent with airglow intensity variations. These polarity changes would be attributed to E x B plasma drifts caused by the polarization electric field embedded in the MSTIDs. The FAI echo powers also varied in agreement with the airglow intensity variations: strong (weak) echoes coincided with the airglow depletion (enhancement) region. Considering the MSTID polarization electric field, it is suggested that the observed FAIs were generated by the gradient drift instability on the bottomside of the F region.

Идентификационный номер: WOS:000268355800002

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eISSN: 2169-9402

Запись 28 из 34

Название: Statistical analysis of seismic processes on the basis of the diffusion approach

Авторы: Shevtsov, BM (Shevtsov, B. M.); Sagitova, RN (Sagitova, R. N.)

Источник: DOKLADY EARTH SCIENCES **Том:** 426 **Выпуск:** 1 **Стр.:** 642-644 **DOI:** 10.1134/S1028334X09040291 **Опубликовано:** JUN 2009

Аннотация: On the basis of the diffusion approach, statistical analysis of seismicity is carried out in order to reveal the peculiarities characteristic of random walk processes. In accordance with the hypothesis on connectivity of earthquakes and energetic criterion, the expansion of the seismic process into a set of sequences is made; each sequence is a Brownian process with specific spatial, temporal, and energetic scales. The statistical distributions of sequences by the number of links, total energies, distances, time, and flight velocities between events are built.

Идентификационный номер: WOS:000266815700029

ISSN: 1028-334X

Запись 29 из 34

Название: Joint observations of a traveling ionospheric disturbance with the Paratunka OMTI camera and the Hokkaido HF radar

Авторы: Koustov, A (Koustov, A.); Nishitani, N (Nishitani, N.); Ponomarenko, PV (Ponomarenko, P. V.); Shiokawa, K (Shiokawa, K.); Suzuki, S (Suzuki, S.); Shevtsov, BM (Shevtsov, B. M.); MacDougall, JW (MacDougall, J. W.)

Источник: ANNALES GEOPHYSICAE **Том:** 27 **Выпуск:** 6 **Стр.:** 2399-2406 **Опубликовано:** 2009

Аннотация: On 10 September 2007 between 10: 00 and 14: 00 UT, the OMTI all-sky imager at Paratunka (Kamchatka, Russia, GLAT similar to 52 degrees) observed the onset and southwestern progression of a localized depletion region in the airglow intensity. The perturbation, while being stretched in the NW-SE direction, crossed the entire field of view of the camera. During the event, the Hokkaido SuperDARN HF radar was monitoring echoes in the Paratunka longitudinal sector. It was detecting a localized band of ground scatter echoes progressing equatorward synchronously with the motion of the optical perturbation. It is suggested that both features resulted from the onset and south-western progression of a localized region with enhanced electric field that influenced the distribution of the plasma density in the ionosphere. Modeling of the HF ground scatter dynamics based on numerical ray tracing demonstrated qualitative consistency with the observations.

Идентификационный номер: WOS:000267543600013

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ISSN: 0992-7689

Запись 30 из 34

Название: Northeastward motion of nighttime medium-scale traveling ionospheric disturbances at middle latitudes observed by an airglow imager

Авторы: Shiokawa, K (Shiokawa, K.); Otsuka, Y (Otsuka, Y.); Nishitani, N (Nishitani, N.); Ogawa, T (Ogawa, T.); Tsugawa, T (Tsugawa, T.); Maruyama, T (Maruyama, T.); Smirnov, SE (Smirnov, S. E.); Bychkov, VV (Bychkov, V. V.); Shevtsov, BM (Shevtsov, B. M.)

Источник: JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS **Том:** 113 **Выпуск:** A12 **Номер статьи:** A12312 **DOI:** 10.1029/2008JA013417 **Опубликовано:** DEC 30 2008

Аннотация: Nighttime medium-scale traveling ionospheric disturbances (MSTIDs) observed in 630-nm airglow images at middle latitudes are known to have a predominantly northwest-southeast phase surface and to move southwestward in the Northern Hemisphere of Earth. However, the mechanisms of MSTID generation and their systematic southwestward motion have not been clarified. In this paper, we report the "northeastward" motion of the MSTIDs observed at Paratunka, Far East Russia (52.97 degrees N, 158.25 degrees E), using an all-sky 630-nm airglow imager at 2000-2300 LT on 19 August 2007. The MSTIDs moved first southwestward but then back northeastward in the northern part of the images. The northeastward motion of the MSTIDs took place coincident with a F layer height decrease observed by an ionosonde at Paratunka. The F layer height decrease was also confirmed by an enhancement of the 630-nm airglow intensity, which seemed to propagate from northeast to southwest. This fact suggests that the F layer height decrease was caused by poleward wind enhancement rather than westward electric field. These observations imply that the F layer height decrease or the poleward thermospheric wind has some role in the northeastward turning of the MSTID propagation direction.

Идентификационный номер: WOS:000262174700002

ISSN: 0148-0227

Запись 31 из 34

Название: Anomaly in high-frequency geoacoustic emission as a close earthquake precursor

Авторы: Gordienko, VA (Gordienko, V. A.); Gordienko, TV (Gordienko, T. V.); Krasnopistsev, NV (Krasnopistsev, N. V.); Kuptsov, AV (Kuptsov, A. V.); Larionov, IA (Larionov, I. A.); Marapulets, YV (Marapulets, Yu. V.); Rutenko, AN (Rutenko, A. N.); Shevtsov, BM (Shevtsov, B. M.)

Источник: ACOUSTICAL PHYSICS **Том:** 54 **Выпуск:** 1 **Стр.:** 82-93 **DOI:** 10.1134/S1063771008010120 **Опубликовано:** JAN 2008

Аннотация: One of the possible earthquake precursor mechanisms, namely, acoustic emission, is discussed. The phenomenon of acoustic emission consists in the emission of acoustic pulses due to the formation of microfaults and cracks that precede fracture of objects, rock collapse in mines, earthquakes, etc. By the example of the geoacoustic emission observation on the Kamchatka Peninsula in the area of the Avachinskaya Bay and by the analysis of anomalies of this emission that accompany major seismic events, it is shown that anomalous geoacoustic noise is generated by the stress produced in the medium prior to these events. The high-frequency range (4-11 kHz) is most informative for the observation of geoacoustic noise caused by the crack formation processes.

Идентификационный номер: WOS:000252805800012

ISSN: 1063-7710

Запись 32 из 34

Название: On the Relation Between High Frequency Acoustic Emissions in Near-surface Rocks and the Electric Field in the Near-ground Atmosphere

Авторы: Kuptsov, AV (Kuptsov, A. V.); Marapulets, YV (Marapulets, Yu. V.); Mishchenko, MA (Mishchenko, M. A.); Rulenko, OP (Rulenko, O. P.); Shevtsov, BM (Shevtsov, B. M.); Shcherbina, AO (Shcherbina, A. O.)

Источник: JOURNAL OF VOLCANOLOGY AND SEISMOLOGY **Том:** 1 **Выпуск:** 5 **Стр.:** 349-353 **DOI:** 10.1134/S0742046307050077 **Опубликовано:** OCT 2007

Аннотация: A field instrument package was installed for synchronous measurements of acoustic emission in rocks at frequencies of 0.1-10000 Hz and the vertical gradient of electric potential in near-ground atmosphere. These investigations for the first time revealed a relationship between emission disturbances in the kilohertz frequency range due to deformation of near-surface rocks and the electric field. The relationship may be observed both during seismically quiet periods and at the final phase of earthquake precursory periods.

Идентификационный номер: WOS:000205746600007

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Запись 33 из 34

Название: Deformation and acoustic precursors of earthquakes

Авторы: Dolgikh, GI (Dolgikh, G. I.); Kuptsov, AV (Kuptsov, A. V.); Larionov, IA (Larionov, I. A.); Marapulets, YV (Marapulets, Yu. V.); Shvets, VA (Shvets, V. A.); Shevtsov, BM (Shevtsov, B. M.); Shirokov, OP (Shirokov, O. P.); Chupin, VA (Chupin, V. A.); Yakovenko, SV (Yakovenko, S. V.)

Источник: DOKLADY EARTH SCIENCES **Том:** 413 **Выпуск:** 2 **Стр.:** 281-285 **DOI:** 10.1134/S1028334X07020341 **Опубликовано:** MAR 2007

Идентификационный номер: WOS:000245522800034

Идентификаторы авторов:

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Dolgikh, Grigory	A-7685-2014	

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Название: Geoacoustic location of earthquake preparation areas

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