References concerning CME

1. Maksimov V.P., Nefedyev V.P. The observation of a "negative burst" with high spatial resolution. Solar Phys., 1991, v. 136, p. 335-342.

The case of a short-time 'disappearance' of the S-component source over the active region is described and its association with events in Hα is discussed. Under the assumption that in this case the radio source was observed to be covered by coronal mass ejection caused by filament eruption, estimates are made of the velocity of the ejection, its linear size and of the optical thickness.

2. Maksimov V.P., Nefedyev V.P. Some possibilities of microwave diagnostics of eruptive prominences. Annales Geophysicae. 1992, v. 10, p. 354-358.

The relation of a short-duration 'disappearance' of the S-component source above the active region to H-alpha events is discussed. Assuming that the cases investigated exhibit coverage of the radio sources by coronal mass ejections, estimates are made of coronal mass ejection velocities, dimensions, and optical thicknesses.

3. A.M.Uralov, S.V. Lesovoi and V.G. Zandanov, A dual-loop initiation model for Coronal Mass Ejections, in "Solar-Terrestrial Magnetic Activity and Space Environment", COSPAR Colloquium Proceedings, September 10-12, 2001, Beijing, China. (in press, 2002)

We propose a new model for the initiation of solar coronal mass ejections (CMEs). The model is based on analyzing observations of the quiescent Hα-filament eruption on the solar disk. The basis for experimental material is data obtained with Siberian Solar Radio Telescope (SSRT, 5.7 GHz).

4. A.M.Uralov, S.V.Lesovoi, V.G.Zandanov, and V.V.Grechnev, Dual-filament initiation of a Coronal Mass Ejection: observations and model, Solar Physics (submitted/accept 2002)

We propose a new model for the initiation of solar coronal mass ejections (CMEs) and CME-associated flares. The model is inferred from the observations of the quiescent filament eruption in the north-western quadrant of the solar disk on September~4, 2000.

The basis for experimental material are the data obtained with the Siberian Solar Radio Telescope (5.7 GHz), Nobeyama Radioheliograph (17 GHz), SOHO/EIT \& LASCO, Yohkoh . Based on the observations, we propose that the eruption could be caused by the interaction of two dextral filaments. According to our model, two these filaments merge to form a dual-filament system (with the tendency to form a single long filament). This results in a slow upward motion of the dual-filament system. Its upward expansion is prevented by an attachment of the filaments to the photosphere by filament barbs as well as by overlying coronal arcades. An initial upward motion is caused by the backbone magnetic field (*first driving factor*) which connects two merging filaments. Flux of this field slowly increases due to the magnetic reconnection of the cross-interacting legs of these merging filaments. If the total length of the dual-filament system is large enough, then the filament barbs detach from the solar surface due to the magnetic reconnection between barbs with the oppositely directed magnetic fields. The detachment of the filament barbs completes the formation of the eruptive filaments itself, and determines the sign of the helicity of their magnetic fields. Appearance of the magnetic helical structure creates an additional upward-directed force (*second driving factor*). Being together first and second driving factors lead to acceleration of the dual-filament system.

If the lifting force of the first and second factors is sufficient to extend substantially the overlying coronal magnetic arcades, then the magnetic reconnection starts below the eruptive filaments in accordance with the classic scheme, and the *third driving factor* starts.

5. . V. G. Eselevich New results on the site initiations of Coronal Mass Ejections. Geophys. Res.,n Lett., v.22 (20),p.2681- 2684, 1995.

Abstract

In this paper it is shown that . In some months during 1985--1987, up to 80-90\% of the total number of CMEs were produced near streamer belts with a NL and only (10-20) of them appear near belts of streamers without NL. (Streamer without NL separate regions in the corona with the same direction of radial fields of magnetic tubes originating from adjacent coronal holes).With increasing solar activity, the center of gravity of the number of the emerging CMEs is shifting toward belts of streamers without NL and reaches over 80% of their total number in some months by the end of 1989. The CME position angle (PA) coincides, on average, with the angle of the portion of NL which straddles the CME. It is quite possible that this codition is satisfied not in thje average but rigorously for each CME.

6. V. G. Eselevich, Y. Tong, New results on the site of initiation of coronal mass~ ejections\\
and an interpretation of observation of their interaction with streamers the J. Gephys. Res. v. 102, A3, p. 4681 – 4690, 1997.

Abstract

The place of origin of coronal mass ejections (CMEs) are streamer belts with a neutral line (NL) and streamer belts without a NL. In some months during 1985--1987, up to 80-90\% of the total number of CMEs were produced near streamer belts with a NL. As one approaches maximum solar activity, along with an increase in the number of CMEs, the proportion of CMEs places of origin lie near streamers without a NL is as high as 80\% . Because of the inaccuracy in determining the longitude, some CMEs can be referred to both categories. Then the CMEs whose places of origin can be associated solely with streamers without NL will make up 20-25\%. Transformation processes of streamer belts with NL and without NL and also processes of disappearance and formation of streamer belts without NL are likely to be an important factor contributing to an enhancement of CME generation. By considering six selected events, it is shown that whether the streamer decays or does not decay with the CME passsage depends on the position of the streamer relative to the CME span on the limb.

7. V. G Eselevich, M. V. Eselevich. Common characteristics of CMEs and BLOBs: a new view of their possible origin. Solar Physics, 203, 165-178, 2001.

Abstract.

An analysis of the LASCO/SOHO data has shown that blobs are similar, in their basic characteristics, to CMEs having a relatively small size and relatively low velocities. The formation of blobs and CMEs is usually accompanied by the process where a separate ray (or rays) of the streamer belt becomes occupied by an additional antisunward traveling plasma of increased density. Generally the size of a CME in the plane of the streamer

belt can exceed the CME size in the direction normal to the belt. Conceivably the formation mechanism of CMEs and their energetics might be associated with the energy of additional antisunward traveling plasma. This should be taken into account when constructing theoretical models of CMEs.

\end{abstract}