TRIGGER PROCESS IN SOLAR FLARE AS DISRUPTION OF PERCOLATED CURRENT

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Standard approach to solar flare origin is based on the turbulent current sheet paradigm. There are several open questions in this consideration about reason of the transition from initial "thick" current region with high conductivity to any extremely thin state with turbulent plasma dominated in. Another aspect of this problem is question about possible trigger mechanisms - sources of external disturbances, what convert current from normal to "anomalous" turbulent state
We present model of flare origin what is based on:
1) approach to current sheet as to percolated random network, generated by numerous instabilities
2) analysis of flute instability of plasma structures in neighborhood of current sheet with threshold-like condition of destabilization (quite prominences and coronal condensations).We show that in result of numerous instabilities (tearing-like, pinch-like, hard threshold conditions of plasma turbulence state) initial current sheet will disrupt into numerous domain of the turbulent and normal plasma with low and high conductivity, correspondently. Current propagation through this mixture is not stream-like, but in opposite, it is like to percolation through random network of resistors. As another percolate systems it may be in two state (normal and flare') with phase transition for density of turbulent domains more then a critical one. We show that the current system in the state near percolation threshold is very sensitive to small (but finite) external disturbances. In result of these disturbances some avalanche-like creation of turbulent domain with high electric resistance has place. We discuss influence of the negative feedback "current redistribution - plasma turbulence - redistribution of resistance - current redistribution-…" . We consider criteria of possible stability loss for plasma structures in a neighborhood of current region and show that quite prominences and coronal condensation may act as trigger of pre-turbulent current sheet.
We discuss here possible influence of the universal power spectrum of clusters in percolated systems on the power like energetic spectrum of accelerated particles.