

WG-V: Theoretical Implications

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Demouin, G. Emslie, P. Grigis, M.Onofri,
E. Kontar, L. Vlahos (C. Dauphin,, G.
Mann, M. Pick)

Main Goals

1. Constrains on particle acceleration from the RHESSI data (close collaboration with all WGs) and other available sources of information on high energy particles
2. Connecting theories on particle acceleration with the global magnetic topologies hosting flares and CMEs
3. Discuss and review possible developments on old and new theories on particle acceleration and encourage young researchers to enter in this research field.

Outline of the Program

- Wednesday (I,II,III) and Thursday (I,II) the group meets to discuss the following
- On the Relation of the Coronal Source and the Footpoints (A. Benz)
- Model-independent inferring of electron distributions from X-ray spectrum (E. Kontar)
- X-ray signatures of coronal turbulence and intermittency, and in common mechanisms between particle acceleration and small-scale coronal heating (E. Buchlin)
- Acceleration of particles in solar flares: linking the magnetic energy release and the acceleration processes (Cyril Dauphin)
- Comparison of electron stochastic acceleration models with RHESSI hard X-ray observations of solar flares (P. Grizis)
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Outline of the Program

- Acceleration of electrons through test particle simulations in electric fields generated by 3D magnetic reconnection (Marco Onofri)
 - Random motion in random electric fields (K. Arzner)
 - Electron acceleration at the reconnection outflow shock ann, Warmuth, and Aurass
- Electron acceleration at DC electric fields in the corona (by Oenel and Mann)

Outline of the Program

- Discussion on special aspects on Magnetic topology, reconnection and acceleration and the predictions from theory (Gordon Emslie, Valentina Zharkova, Pascal Demoulin, Loukas Vlahos)
- Thursday (IV) we will meet with group WG4,3
- Friday (II) with WG2 and Friday (III) with WG1.
- Friday (IV) future plans.