

THE ROLE OF CME DYNAMICS IN PRODUCTION OF ~10 MEV PROTONS

L.Kocharov (1), J.Torsti (1), and O.C.St.Cyr (2)

(1) University of Turku, Finland, (2) Comp. Phys. Inc., NASA GSFC, USA

We compare two groups of the 300-800 km/s CMEs: (1) (very) gradually accelerating CMEs with acceleration below 10 m/s/s, and (2) impulsively accelerating CMEs with acceleration >20 m/s/s near the Sun, continuing then with the constant speed across the LASCO field of view. An association of those CMEs with solar energetic particle events is studied using the data of the energetic particle experiment ERNE aboard SOHO. There were no SEPs registered in association with the first group CMEs, whereas about 8% of the second group CMEs produced an enhancement in the ~10 MeV proton flux at SOHO. This result along with a number of additional arguments supports an idea that production of SEPs by the moderate speed CMEs depends not only on the final speed but also on the magnitude of acceleration that CME experiences during its liftoff.