

# HIGHER HARMONIC CORONAL LOOP OSCILLATIONS

I. De Moortel, C.S. Brady and S. Régnier

*School of Mathematics, University of St Andrews, North Haugh, St  
Andrews, KY16 9SS, UK*

TRACE 171 Å observations taken on 13 May 2001 shows evidence of flare-induced, transverse coronal loop oscillations and in this particular dataset, higher harmonics in the transverse loop displacements are spatially resolved. The oscillations are identified as the second harmonic, fast MHD, kink waves (periods of 577 - 672 sec), with higher harmonics (250 - 346 sec) also present. 3D MHD simulations, using a potential field extrapolations of the observed active region as an initial condition, are used to investigate the apparent absence of the fundamental mode and the fact that it is the second harmonic ( $P_2$ ) which dominates the oscillatory behaviour of this particular loop.