THE EFFECT OF WAVE LEAKAGE ON P-MODE DAMPING

I. De Moortel[1] and R. Rosner[2]

[1]*School of Mathematics, University of St Andrews, North Haugh, St Andrews, KY16 9SS, UK;*
[2]*Enrico Fermi Institute, The University of Chicago, Chicago, IL 60637, USA*

The appearance of p-mode-like frequencies (mainly three to five minutes), in a variety of solar structures, seems to indicate that at least part of the low-frequency p-mode energy penetrates into the atmosphere. In particular, propagating slow magneto-acoustic waves show a spectrum that is peaked at both three and five minutes, strongly suggesting a relationship between these modes and solar p-modes. Indeed, it is not obvious why atmospheric should be characterised by such a spectrum other than that this simply reflects the spectrum of the trapped acoustic modes of the solar interior. Here, we investigate the effect of the observed leakage on p-mode damping, exploiting one of the very few opportunities to constrain the damping mechanisms for p-modes by direct observations. A simple order of magnitude comparison between the observed slow mode energy flux and the p-mode damping rate shows that leakage into the overlying coronal atmosphere might be able to account for a significant fraction of p-mode damping.