

# TRANSVERSE OSCILLATIONS OF CORONAL LOOPS

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We consider transverse oscillations of coronal loops first observed by TRACE on 14 July 1998. We mainly concentrate on theory of these oscillations, although relevant observational results are also discussed. The transverse coronal loop oscillations were interpreted as standing fast kink waves in magnetic flux tubes. We start the review from the discussion of theory of kink waves in a homogeneous straight magnetic cylinder. Then we consider the effects of stratification, loop curvature and non-circular cross-section.

An important property of observed transverse coronal loop oscillations is their fast damping. We briefly review different mechanisms suggested for explaining this phenomenon. After that we concentrate on damping due to resonant absorption. First we describe the analytical results obtained with the use of thin transitional layer approximation. Then we compare them with numerical results obtained for arbitrary density variation inside the tube.

We present in more detail the recently obtained results on transverse oscillations of twisted coronal loops and coronal loops with the variable cross-section. In the final part of the talk the implication of theoretical results for coronal seismology will be discussed.