Convexity of Whitham’s wave of extreme form.

Whitham’s model of shallow water waves is a non-homogeneous non-local dispersive equation that features limiting waves such as the Stokes wave for Euler. In this talk, we show the existence of a periodic traveling wave of extreme form of the Whitham equation that has a convex profile between consecutive stagnation points, at which there is a cusp of exactly $C^{1,2}$ regularity, answering a conjecture by Ehrnström and Wahlén. Joint work with A. Enciso and B. Vergara. (Received January 15, 2019)