

**Global smoothing for Korteweg de Vries equation  
with periodic boundary conditions**

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In this talk we will review the low regularity well-posedness results of the KdV equation introducing various methods used in the theory. We will also discuss a recent result on the smoothing properties of the equation which states that for initial data in Sobolev spaces  $(H^s, s > -1/2)$  the difference of the linear and nonlinear evolutions always belongs to a higher index Sobolev space. This is a joint work with Nikos Tzirakis.