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Spectral Representations of Solutions of linear evolution equations using Steklov eigenfunctions. Preliminary report.

This talk will describe the approximation of solutions of linear evolution equations with time-dependent Dirichlet boundary data. The boundary trace spaces associated with such problems have a natural basis consisting of Steklov eigenfunctions of the associated linear elliptic operator. A spectral representation of the solution of this initial boundary value problem will be described. (Received September 21, 2005)