

# Weighted interpolation in Paley–Wiener spaces and finite-time controllability

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We consider the solution of weighted interpolation problems in model subspaces of the Hardy space  $H^2$  that are canonically isometric to Paley–Wiener spaces of analytic functions. A new necessary and sufficient condition is given on the set of interpolation points which guarantees that a solution in  $H^2$  can be transferred to a solution in a model space. The techniques used rely on the reproducing kernel thesis for Hankel operators, which is given here with an explicit constant. One of the applications of this work is to the finite-time controllability of diagonal systems specified by a  $C_0$  semigroup.

The talk is based on a joint work with J.R. Partington (Leeds) and S. Pott (Lund).