



# FMSP Lectures

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Determination of time-dependent  
coefficients for wave equations from  
partial data

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Abstract:

ABSTRACT. Let  $\Omega$  be a  $C^2$  bounded domain of  $\mathbb{R}^n$ ,  $n \geq 2$ , and fix  $Q = (0, T) \times \Omega$  with  $T > 0$ .

We consider the inverse problem of determining a time-dependent damping coefficient  $a$  and a time-dependent potential  $q$ , appearing in a Dirichlet initial-boundary value problem for the damped wave equation  $\partial_t^2 u - \Delta_x u + a(t, x)\partial_t u + q(t, x)u = 0$  in  $Q$ , from partial observations on  $\partial Q$ . We consider both results of uniqueness and stability.