BOUNDARY SIDEWISE OBSERVABILITY OF THE WAVE EQUATION

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We consider the wave equation on a bounded domain of $\mathbb{R}^n$ with non homogeneous boundary Dirichlet data or sources g supported on a subset of the boundary. We analyze the problem of observing the source g out of boundary measurements done away from its support. We establish observability inequalities under a suitable geometric condition on the support of the source and the measurement set, to be compared to the so-called Geometric Control Condition of Bardos-Lebeau-rauch, for sources g fulfilling suitable pseudo-differential conditions. The proof relies on microlocal arguments and is essentially based on the use of microlocal defect measures.

This talk relies on a joint work with E. Zuazua (Univ. Erlangen, Germany, Fundacion Deusto, Bilbao & Univ. Autonoma Madrid)

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