

Semi-classical defect measure and stabilization for Zaremba problem

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We present in this talk results on exponential decay of energy for the wave equation with Zaremba boundary condition. This boundary condition is the following, on one part of the boundary, we set the Dirichlet boundary condition, on another part we set the Neumann boundary condition. The two parts are separated by a smooth manifold on the boundary. The proof is based on propagation of measure. Actually, we prove a resolvent estimate by contradiction. From this contradiction, we construct a semi-classical measure admitting some properties. On one hand, it is supported on characteristic set, the support of measure propagates along bicharacteristic flow, the measure is null on damping support. Under geometrical properties on damping support, we yield that the measure is null everywhere. On other hand, we prove that the measure is not identically null. This gives a contradiction.