<u>Effective Medium Theory for Embedded Obstacles in Elasticity with Applications to Inverse Problems</u>

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In this talk, we mainly consider a time-harmonic elastic wave scattering from a general inhomogeneous medium with an embedded impenetrable obstacle, which is strongly motivated by the partial-data inverse boundary problem and the inverse scattering problem of recovering complex scatterers consisting of mediums and buried obstacles. We first explore the scattering model with embedded obstacle can be effectively approximated by a scattering model with an isotropic elastic medium with particular material parameters, then we derive a sharp estimate to rigorously verify such an effective approximation. This result in this talk is joint works with Zhengjiang Bai (XMU), Huaian Diao (JLU) and Hongyu Liu (CityU).