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Drossos Gintides and **Mourad Sini*** (mourad.sini@oeaw.ac.at), Altenbergerstrasse, 69, 4040 Linz, Austria. *Identification of interfaces using the pressure parts (or the shear parts) of the elastic waves.*

In this talk, we are concerned with the inverse scattering by interfaces for the linearized, homogeneous and isotropic elastic model. We are interested by detecting smooth interfaces from the knowledge of elastic far field patterns. We prove that the 'pressure' parts of the far field patterns over all directions of measurements corresponding to all 'pressure' (or all 'shear') incident plane waves are enough for the detection. We also establish that the shear parts of the far field patterns corresponding to all the 'shear' (or all 'pressure') incident waves are also enough. This shows that any of the two different types of waves is enough to detect interfaces at a fixed frequency. (Received August 25, 2010)