Modeling of the reflection of acoustic surface waves at the interface of a graded layer-determination of the thickness of graded region

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The tow-dimensional spectral analysis of power reflectivity of structures allows to identify the modes which propagating in the region near to their surface, the dispersion of these modes can be used to determine the thickness of studied structures by exploiting the cutoff frequencies of Sezawa modes. Just from these frequencies, the acoustic energy associated to these modes, begin to be radiated in water. The cutoff frequencies of Sezawa modes can be easily located in the image of the power reflectiity as series of stains with a minimum of acoustic energy. We have applied this method to a structure Al/Si, which presents a gradient in its elastic constants in the direction perpendicular to its surface, to calculate by the reverse problem the depth of graded region.