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Flow resistivity profile inversion for a porous medium

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Predictions for the low frequency sound waves propagation in a porous medium needs the knowledge of the flow specific resistance of the medium. We present a scheme for the flow resistivity profile inversion for a layered medium. In the framework of the fluid equivalent model a closed-form relation of the resistivity profile with the Fourier transform of the reflection is derived. It provide a straightforward way to perform the reconstruction of the profile. The result show a strong correlation between the flow resistivity profile and the reflection coefficient in this model. Some numerical simulations are given as examples of the applicability of this scheme.