

Erratum to: Stability of the P-to-S Energy Ratio in the Diffusive Regime

by George C. Papanicolaou, Leonid Ryzhik and Joseph B.Keller

The expressions for the diffusion mean free paths l_p^* and l_s^* that enter into the diffusion constant (equation (36) of Papanicolaou *et al.* 1996) are correct only when the fluctuations in the medium parameters ρ, λ, μ are uncorrelated and have flat power spectra. In this case, however, $\langle \cos \theta_p \rangle = \langle \cos \theta_s \rangle = 0$ and the diffusion mean free paths are equal to the transport mean free paths. If the fluctuations of the density and Lamé parameters are correlated, the usual case, then l_p^* and l_s^* are solutions of the 2×2 linear system (Ryzhik *et al.* (1996) section 5.3, equation (5.43))

$$\begin{aligned}(\Sigma^{PP} + \Sigma^{PS} - \eta^{PP})l_p^* - \eta^{PS}l_s^* &= v_P \\(\Sigma^{SS} + \Sigma^{SP} - \eta^{SS})l_s^* - \eta^{SP}l_p^* &= v_S.\end{aligned}$$

Here Σ^{PP} , Σ^{SS} , Σ^{PS} and Σ^{SP} are the total scattering cross sections. The constants η^{PP} , η^{PS} , η^{SP} and η^{SS} are obtained from the differential scattering cross sections σ^{PP} , σ^{SS} and σ^{SP} . They are given in Ryzhik *et al.* (1996), section 5.3.

We are grateful to Joseph Turner for pointing out to us this error.

References

- [1] Papanicolaou, G.C., L. Ryzhik, and J.B. Keller (1996), Stability of the P-to-S Energy Ratio in the Diffusive Regime, *Bull. Seism. Soc. Am.* **86**, no. 4, 1107-1115.
- [2] Ryzhik, L., G.C.Papanicolaou, and J.B.Keller (1996), Transport equations for elastic and other waves, *Wave Motion*, to appear.

Department of Mathematics
Stanford University
Stanford, California 94305