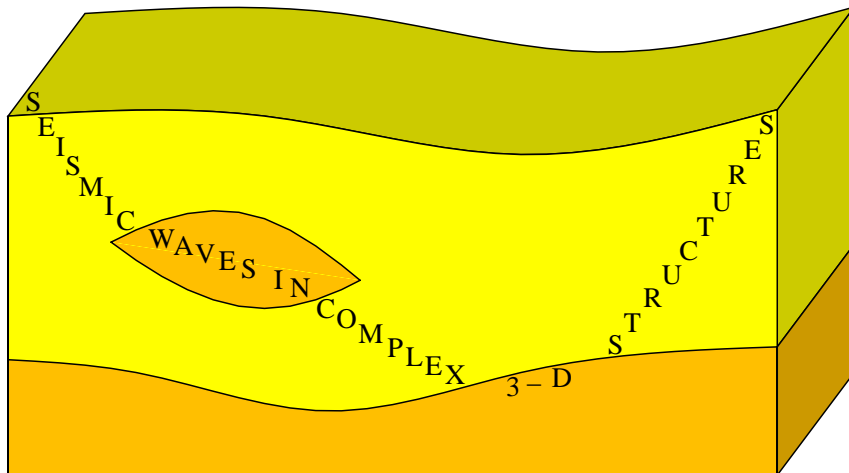


Zero-order ray-theory Green tensor in a heterogeneous anisotropic medium

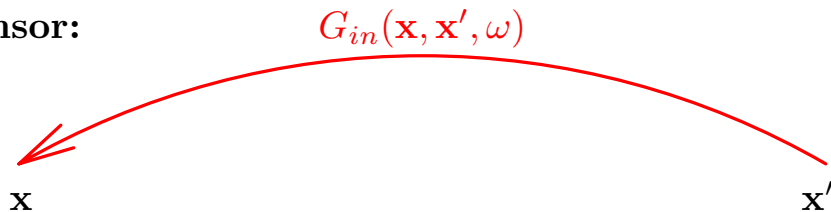
Luděk Klimeš

Department of Geophysics
Faculty of Mathematics and Physics
Charles University in Prague



<http://sw3d.cz>

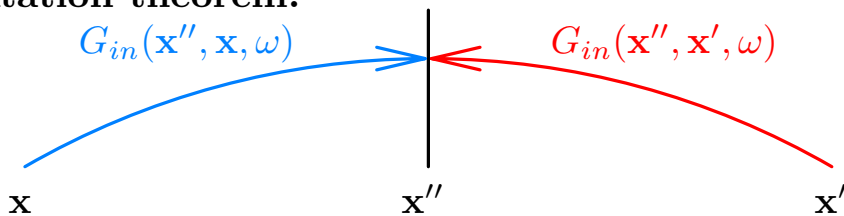
Green tensor:



Zero-order ray-theory approximation:

$$G_{in}(\mathbf{x}, \mathbf{x}', \omega) \simeq \frac{g_i(\mathbf{x}) C_n(\mathbf{x}')}{\sqrt{\rho(\mathbf{x}) v(\mathbf{x})} L(\mathbf{x}, \mathbf{x}')} \exp[i\varphi(\mathbf{x}, \mathbf{x}')] \exp[i\omega \tau(\mathbf{x}, \mathbf{x}')]$$

Representation theorem:



$$g_i(\mathbf{x}) C_n(\mathbf{x}') = \text{const } C_i(\mathbf{x}) C_n(\mathbf{x}') \implies C_i(\mathbf{x})$$

$$\varphi(\mathbf{x}, \mathbf{x}') = \varphi(\mathbf{x}'', \mathbf{x}) + \varphi(\mathbf{x}'', \mathbf{x}') + \text{const} \implies \text{phase shift rule, } \varphi(\mathbf{x}, \mathbf{x})$$

Reference:

Klimeš, L. (2011): Zero-order ray-theory Green tensor in a heterogeneous anisotropic medium. In: *Seismic Waves in Complex 3-D Structures, Report 21*, pp. 115–123, Dep. Geophys., Charles Univ., Prague, online at “<http://sw3d.cz>”.

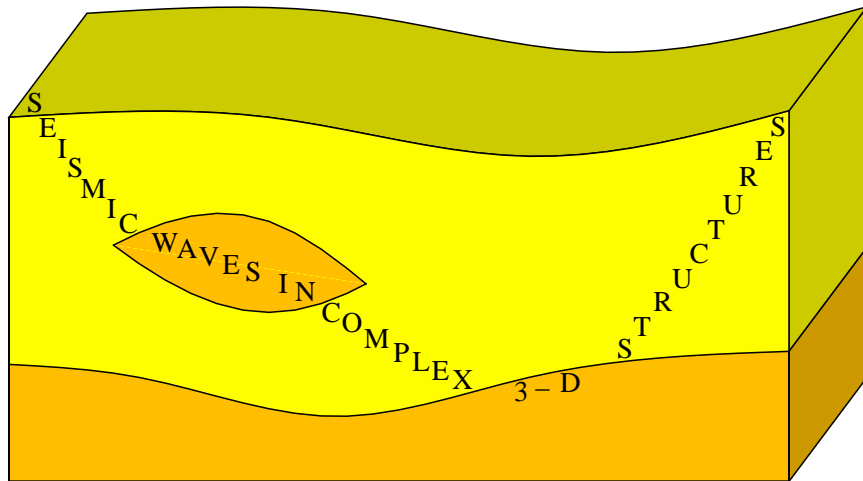
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