

# DAzimSurfTomo

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DAzimSurfTomo is a package of direct inversion of surface wave for 3-D isotropic Vsv and azimuthal anisotropy without conventional tomography. Please refer to [Liu et al. \(2019\)](#) for the details of the method. The [fast marching method](#) (Rawlinson et al., 2004) is used to compute period-dependent surface wave traveltime and ray paths. The forward computation of surface wave is based on the Thomson-Haskell method (the [code of Herrman](#)) (Herrmann, 2013). The inversion frame is similar to [DSurfTomo](#) (Fang et al. 2015) for isotropic Vs inversion with the same initial model and input data format.

Github: <https://github.com/Chuanming-Liu/DAzimSurfTomo>

Please check the [manual](#) in ./doc for usage.

V1.0: [Mineos](#) is used in the calculation of frequency-dependent phase velocities. Only azimuthal anisotropy is inverted. (Aug, 2017)

V2.0: Both isotropic Vsv perturbation and azimuthal anisotropy are inverted. The transfer matrix method (Herrmann, 2013) is used to calculate frequency-dependent phase velocities. (Jun, 2019)

## References:

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Rawlinson, N. & Sambridge, M., 2004. Wave front evolution in strongly heterogeneous layered media using the fast marching method, *Geophys. J. Int.*, 156(3), 631–647.

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