A review is given of seismic inversion in one, two and three dimensions. Ample attention is paid to the difference between inverse filtering and parametric inversion. The influence of a priori information on both inversion methods is shown. The concepts bias and variance are critically discussed. The expressions for the seismic inversion results are translated to the frequency-wavenumber domain. From those expressions it will be derived that the spatial resolution property of inversion results is defined by two basic parameters:

- frequency range,
- aperture range.

In particular, vertical and lateral resolution properties will be derived for inversion results in post-stack and pre-stack inversion. Finally, conclusions will be given on the ability to retrieve trend information and fine detail from seismic inversion results.

Delft University of Technology, Laboratory of Seismics and Acoustics, PO Box 5046, 2600 GA Delft, The Netherlands.

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