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	Nota di contenuto	Governing equations for wave propagation in a fluid-saturated porous medium -- Green’s tensors for wave propagation in a fluid-saturated porous medium -- On wavemodes at the interface of a fluid and a fluid-saturated poroelastic solid -- Pseudo interface waves observed at the fluid/porous-medium interface. A comparison of two methods -- Impedance and ellipticity of fluid/elastic-solid interface waves: medium characterization and simultaneous displacement - pressure measurements -- Impedance and ellipticity of fluid/porous-medium interface waves: medium characterization and simultaneous displacement - pressure measurements -- In-situ permeability from integrated poroelastic reflection coefficients.
	Sommario/riassunto	The feasibility to extract porous medium parameters from acoustic recordings is investigated. The thesis gives an excellent discussion of our basic understanding of different wavemodes, using a full-waveform and multi-component approach. Focus lies on the dependency on porosity and permeability where especially the latter is difficult to estimate. In this thesis, this sensitivity is shown for interface and reflected wavemodes. For each of the pseudo-Rayleigh and pseudo-Stoneley interface waves, unique estimates for permeability and porosity can be obtained when impedance and attenuation are combined. The pseudo-Stoneley wave is most sensitive to permeability:

both the impedance and the attenuation are controlled by the fluid flow. Also from reflected wavemodes unique estimates for permeability and porosity can be obtained when the reflection coefficients of different reflected modes are combined. In this case, the sensitivity to permeability is caused by subsurface heterogeneities generating mesoscopic fluid flow at seismic frequencies. The results of this thesis suggest that estimation of in-situ permeability is feasible, provided detection is carried out with multi-component measurements. The results largely affect geotechnical and reservoir engineering practices.