

Parameters	Typical range of values in underwater medium	Typical values used in inversion	Units	Remarks
Particle diameter (D)	0–150	{1, 2, ..., 150}	mm	D_{50} is used in the global sensitivity analysis (GSA).
SD (σ)	0.01–10	$2D_{50} = D_{84}$	mm	Used in the GSA; the relation $2D_{50} = D_{84}$ is typically used (Recking, 2013).
Impact velocity (U_{imp})	0.001...5	{0.01; 0.1; 1; 5}	m s^{-1}	The same for all the grain size classes
Distance of measurement (r)	0.01...10	1	m	It acts on the delay time T_d found in the model of Eq. (7).
Angle of directivity (θ)	$0^\circ \dots 90^\circ$	0°	deg	In theory, if $\theta = 90^\circ$, then the wave amplitude is zero; it also defines the T_d .
Sound celerity in water (c)	1403–1507	1483	m s^{-1}	Dependent on temperature, water salinity, etc.
Water density (ρ)	960–1025	999	kg m^{-3}	Dependent on temperature, water salinity, etc.
Modulus of elasticity (E_{long})	10–70	55	GPa	Materials like limestone, quartz, or granite.
Poisson's ratio of impacting bodies (ν)	0.15–0.2	0.2	–	The typical values are for granite. The density ρ_s is used to
Density of sphere (ρ_s)	1800–2750	2700	kg m^{-3}	Used to compute the contact duration