

| Parameters | Typical range of values in under-water 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°...90° | | 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. |
| Density of sphere (ρ_s) | 1800–2750 | | 2700 | kg m^{-3} | The density ρ_s is used to Used to compute the contact duration |