

Designing Physics Problems with *Mathematica* Example II

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Customarily in the physics of sound, static-acoustic-related topics are addressed. For instance, the change in the sound level vs discrete change in the distance. In dynamic cases, e.g. the Doppler shift although the relative motion of the components i.e. the source and the sensor are essential the movements are limited to uniform motions. In this investigating report, scenarios are considered departing these limitations. In the former time-dependent sound level and the latter nonuniform motions are analyzed. Aside from light long-hand mathematical formulations, the majority of the analysis is carried out utilizing a Computer Algebra System (CAS) specifically *Mathematica*. The analysis and the format of the development are crafted flexibly conducive opportunities for furthering quests for the "what if" scenarios.

Keywords. Physics of Sound, Time-dependent Sound Level, Designing Physics Problems, Computer Algebra System, *Mathematica*