

**ACOUSTICS2008/3188**  
**The scattering of sound by a moving sphere in a stratified liquid**

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The interaction of sound with a sphere and the Doppler shift caused by scatterers in motion are well described in the literature. A numerical study is performed on the interaction of sound with a moving sphere and with multiple moving spheres. The study shows how the reflected sound fields are influenced by the relative motion and relative position of the spheres. The aim of the research is to discover efficient acoustic methods to detect and characterize moving spheres at different levels of complexity determined by the number of spheres, their relative velocities and the velocity of the surrounding liquid. At a first stage the interaction of sound with a single sphere in a stratified fluid flow is investigated. The research is performed in the framework of the use of ultrasound for biomedical applications.