

QUANTITATIVE VISUALIZATION OF ACOUSTICAL FIELD BY DIGITAL DYNAMIC LASER SPECKLE PHOTOGRAPHY

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- Ranging from very low intensity sound to strong fields including cavitation and shock waves, acoustic fields vary considerably in frequency, magnitude, duration and linearity.
- Sound waves occur in a large number of natural and technological areas and have relevance in, e.g. musical acoustics, speech and hearing research, medical diagnostic imaging, physiotherapy application, sonochemistry and sonar.
- Underwater acoustic pressure fields are widely employed by the medical and marine communities in a variety of applications.
- Sound waves visualization is an important and difficult topics related with interaction of laser probing light with refractive pattern generated by pressure distribution in a sound wave

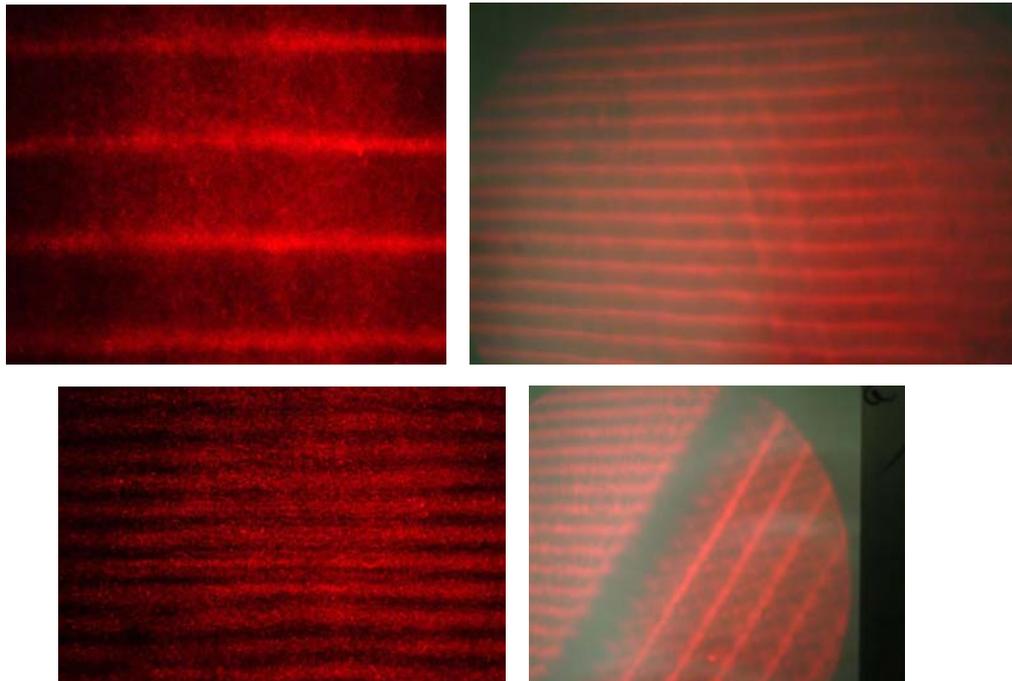


Fig.1. Examples of acoustical standing waves visualized by
digital dynamic laser speckle photography

Conclusion

Acoustic standing waves of wide range of frequencies have been quantitatively visualized using Digital PIV and Single Exposure Speckle Photography and Autocorrelation Analysis.

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