

# Cavitation Bubbles interaction with hard and soft matter: from erosion to nucleation

Date and Time

**Wednesday October 18, 2023**  
**15:00 - 16:00**

Zoom

**Meeting ID : 828 7674 7984**

**Passcode : 69703**

言語 / 英語

Language / English

どなたでもご聴講いただけます  
Everyone is welcome to attend.

Venue



東京農工大学  
小金井キャンパス 6号館 2階 201号室  
Room 201, 2F, Building 6,  
Koganei Campus, TUAT

Speaker



**Dr. Claus-Dieter Ohl**

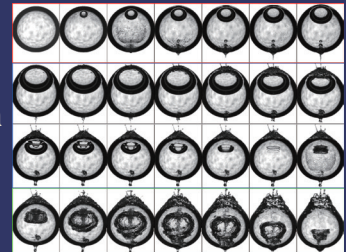
Professor

Department of Natural Sciences

Otto-von-Guericke University (Germany)

Abstract

Non-spherical cavitation bubble dynamics in liquids are known to create enormous shear stresses which may be even enhanced when the bubbles are entrained in a flow. Yet the mechanism by which cavitation creates erosion is through shock wave focusing and not related to the jet impact or a spherical energy focusing. It is actually the opposite; erosion results from the loss of axisymmetry.



Non-spherical cavitation in elastic solids generate shear waves that transport deformation energy to distances much larger than the local strain field. We will show that two shear waves with different orientation are generated near a boundary and their individual amplitude is a function of the stand-off distance. These waves can be recorded with acoustic plane wave imaging at very high frame rates. I'll end the presentation with a mechanism through which cavitation is nucleated from shock-wave gas-bubble interaction in tissue.

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■ お問い合わせ先 / Contact  
グローバルイノベーション研究院 / 工学研究院 田川 義之  
Institute of Global Innovation Research / Institute of Engineering  
Professor Yoshiyuki Tagawa  
e-mail: tagawayo (ここに @ を入れてください) cc.tuat.ac.jp

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