



# Pixel Club

You are invited to attend a lecture by

הנכם מוזמנים להרצאה של

**Tali Treibitz**

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The Technion

בנושא :

## Geometry and Photometry of Imaging Through a Medium

Images taken through a medium may suffer from poor visibility and loss of contrast. Light passing through undergoes absorption and scattering. Wavelength dependent attenuation causes changes in color and brightness. In addition, light that is scattered back from the medium into the camera (backscatter) veils the object, degrading visibility and contrast. Low signal to noise ratio imposes resolution limits, even if there is no blur. Moreover, refraction between the medium and the camera (in air) causes geometric distortions that harm geometric reconstruction. Nevertheless, there is a strong need to perform vision tasks in such media. Thus, in this work, we look both at photometric and geometrical aspects of imaging in these conditions.

In the talk I give an overview of our contributions in this subject:

- Resolution limits imposed by noise
- Geometry limits: The non-single viewpoint nature of imaging systems looking into water through a flat glass.
- Polarization-based removal of backscatter.

All the above is demonstrated in field experiments underwater and in haze.

\* A PhD research under the supervision of Prof. Yoav Y. Schechner

The lecture will take place on Tuesday, 10/11/2009  
at 11:30 in room 1061  
Mayer Building  
Technion City

ההרצאה תתקיים ביום שלישי, 10/11/2009  
בשעה 11:30 בחדר 1061  
בבניין מאייר  
קריית הטכניון

כיבוד קל יוגש לפני תחילת ההרצאה

הזמנה זו מהווה אישור כניסה עם רכב לטכניון

