

# INVITATION TO A GUEST LECTURE

## CLEMENS BECHINGER, UNIVERSITY OF STUTT GART

Dear Colleague,

we cordially invite you to the following guest lecture in the scope of our workshop from 28<sup>th</sup> of April 2011 – 29<sup>th</sup> of April 2011. Thank you.

<p><b>CLEMENS BECHINGER – STUTT GART, GERMANY</b> Head of the 2nd Institute of Physics, University of Stuttgart</p>
<p><b>Presentation Title</b></p>
<p><b>“Colloidal Monolayers on Quasicrystalline Surfaces”</b> (35-40 min.)</p>
<p><b>Date, Time &amp; Location</b></p>
<p><b>“Christian-Doppler-Lecture Hall”</b> (Faculty of Physics, University of Vienna – Boltzmannngasse 5/Strudlhofgasse4, 3rd Floor, A-1090 (9th District) Vienna, Austria)</p> <p><b>Friday, 29.04.2011, 09:00 – 09:40</b></p>
<p><b>Abstract</b></p>
<p><i>Clemens Bechinger</i> 2. Physikalisches Institut, Stuttgart, Germany</p> <p><i>Monolayers on crystalline surfaces often form complex structures having physical and chemical properties strongly differing from those of their bulk phases. Such hetero-epitactic overlayers are currently used in nanotechnology and understanding their growth mechanism is important for the development of novel materials and devices. Compared to crystals, quasicrystalline surfaces exhibit much larger structural and chemical complexity leading e.g. to unusual frictional, catalytical or optical properties. Accordingly, deposition of thin films onto such substrates can lead to novel structures which may even exhibit typical quasicrystalline properties. Here we report a real-space investigation of the phase behaviour of a colloidal monolayer interacting with a quasicrystalline decagonal substrate created by interfering five laser beams. We observe a novel pseudomorphic phase which exhibits likewise crystalline and quasicrystalline structural properties. It can be described by an Archimedean-like tiling consisting of alternating rows of square and triangular tiles. In addition to establishing a link between Archimedean tilings and quasicrystals, our experiments allow to investigate in real space how single-element monolayers can form commensurate structures on quasicrystalline surfaces.</i></p>