Leibniz Universität Hannover

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# Oberseminar Analysis und Theoretische Physik

## Dr. Xi Chen

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## Geometric Inverse Problems in Gauge Theory

The fundamental forces of elementary particles are described by the Euler-Lagrange equations in the Standard Model of particle physics. The Yang-Mills equation addresses the electroweak and strong forces of gauge bosons. We will discuss the uniqueness of the detection of gauge bosons from local measurements. In terms of differential geometry, the forces of gauge bosons are modeled by the connections of the fibre bundle of the Standard Model, the parallel transport of the Yang-Mills connection is viewed as a broken X-ray transform, the detection of gauge bosons amounts to the reconstruction of connections via the X-ray transform.
This is joint work with M. Lassas (Helsinki), L. Oksanen (Helsinki) and G. Paternain (Cambridge).

## Dienstag, 8.6.2021, 15:00 Uhr

Interessierte erhalten die Zugangsinformationen von
Herrn Prof. Dr. Elmar Schrohe (schrohe@math.uni-hannover.de).
Mitglieder des Oberseminars haben Zugang über die Meetings der StudIP-Veranstaltung "Oberseminar Analysis und Theoretische Physik".

**Veranstalter:**
Prof. Dr. Wolfram Bauer, Prof. Dr. Joachim Escher, Prof. Dr. Johannes Lankeit, Prof. Dr. Elmar Schrohe, Prof. Dr. Christoph Walker