



SEMINAR
of the
Thematic Line INVERSE PROBLEMS IN HEALTH SCIENCES

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**Analysis of the curvature of 3D edges with the
Taylorlet transform**

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In many applications such as medical and seismic imaging, there is an increasing need to identify and analyze surfaces of discontinuities and other distributed singularities in 3-dimensional data. To this end, the 3-dimensional shearlet transform offers a proper method for the analysis of the orientation and position of edges. In this talk, we consider an extension of this transform which additionally utilizes parabolic shears and allows for a detection of the local curvature of an edge. We will highlight the differences between the locally elliptic and hyperbolic case and how this distinction can be exploited to design a fast detection algorithm.

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