PROGRAM

The schedule consists of two lecture courses and 4 exercise sessions.

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<th>Mon</th>
<th>Tue</th>
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<tbody>
<tr>
<td>9:15 – 10:45</td>
<td>Banagl L1</td>
<td>Brüning L2</td>
<td>Banagl L3</td>
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<td>13:15 – 14:45</td>
<td>Brüning L1</td>
<td>Banagl L2</td>
<td>Brüning L3</td>
<td>Banagl L4</td>
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<td>16:00 – 18:00</td>
<td>Exercise</td>
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On Fr. Aug. 8, we finish at 16:30 to allow for return travel. Thus the schedule for Fr. is: 9:00 – 10:30 Banagl, 11:00 – 12:30 Brüning, 14:00 – 16:30 exercises.

Course 1: Topological Invariants of Stratified Spaces

Lecturer: Banagl

Topics: Stratification theory, pseudomanifolds, and intersection cohomology; Relation to Cheeger’s $L^2$-Cohomology; The Witt condition (topologically), the signature, and singular bordism theories; characteristic classes for singular spaces; Intersection spaces and the scattering metric; Applications: flatness, equivariant cohomology, algebraic geometry and mirror symmetry, $L$-Theory and the stratified Novikov conjecture.

Course 2: Spectral Invariants

Lecturer: Brüning

Topics: Review of the de Rham-Hodge operator and spectral theory on compact oriented manifolds (as model); Hilbert complexes, Simplicial complexes (as illustration), Cheeger’s results; Whitney spaces (in the sense of Mather), examples; Condition (b) and the equivalent version of Thom-Trotman; Abstract Whitney spaces (in the sense of Mather) or Thom-Mather stratified spaces; The double of an abstract Whitney space with boundary; Whitney embeddings of abstract Whitney spaces; Conic metrics; The Witt condition (analytically); The resolvent construction on Whitney spaces with applications.

Location: Erwin Schrödinger-Zentrum, Rudower Chaussee 26, 12489 Berlin (Adlershof), 0’307 (ground floor).