1154-94-12   **Ingrid Daubechies***, Duke University, Durham, NC 27708. *Mathematical Frameworks for Signal and Image Analysis. Lecture II: Diffusion methods in manifold and fibre bundle learning.*

We will visit several examples in signal and image analysis, every time building an appropriate mathematical framework, ranging from functional and harmonic analysis to differential geometry. Although there will be cross-referencing, the lectures will be sufficiently independent that each can stand on its own, so that JMM participants could follow any of the lectures even if they missed one or more preceding it.

Lecture II: Diffusion methods help understand and denoise data sets; when there is additional structure (as is often the case), one can use (and get additional benefit from) a fiber bundle model. (Received September 3, 2019)