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Ingrid Daubechies studied theoretical physics at the Free University of Brussels, where she earned her PhD in 1980. The following year she moved to the United States to pursue a two-year postdoctoral fellowship, and in 1987 she settled definitively in the United States. Her first job was as a member of the technical staff at AT&T Bell Laboratories, where she stayed until 1994. That same year she took up a professorship in the Department of Mathematics at Princeton University. Daubechies spent the next 16 years at Princeton, where she was active especially in the Program in Applied and Computational Mathematics. In 2010, she was elected President of the International Mathematical Union, and the following year obtained the Benjamin Franklin Medal for Electrical Engineering and left Princeton to take up her current appointment at Duke University. In 2012 she was awarded the BBVA Foundation Frontiers of Knowledge Prize. Ingrid Daubechies is very well-known for her work on wavelets.

Applied mathematics helping Art Historians and Conservators: Digital Cradle Removal

Abstract
Between the 12th to the 17th century, European artists typically painted on wooden boards. To remediate or prevent structural or insect damage, conservators in the 19th and first half of the 20th century first thinned the panels to a few mm, and then strengthened the much thinner wood structures by (permanently)attaching to their backs hardwood lattices called cradles. These cradles are highly visible in X-ray images of the paintings. X-rays of paintings are a useful tool for art conservators and art historians to study the condition of a painting, as well as the techniques used by the artist and subsequent restorers. The cradling artifacts obstruct a clear "reading" of the X-rays by these experts. We introduce an algorithm that removes these artifacts, using a variety of mathematical tools, including Bayesian algorithms. Joint work with Rachel Yin, Bruno Cornelis and David Dunson.