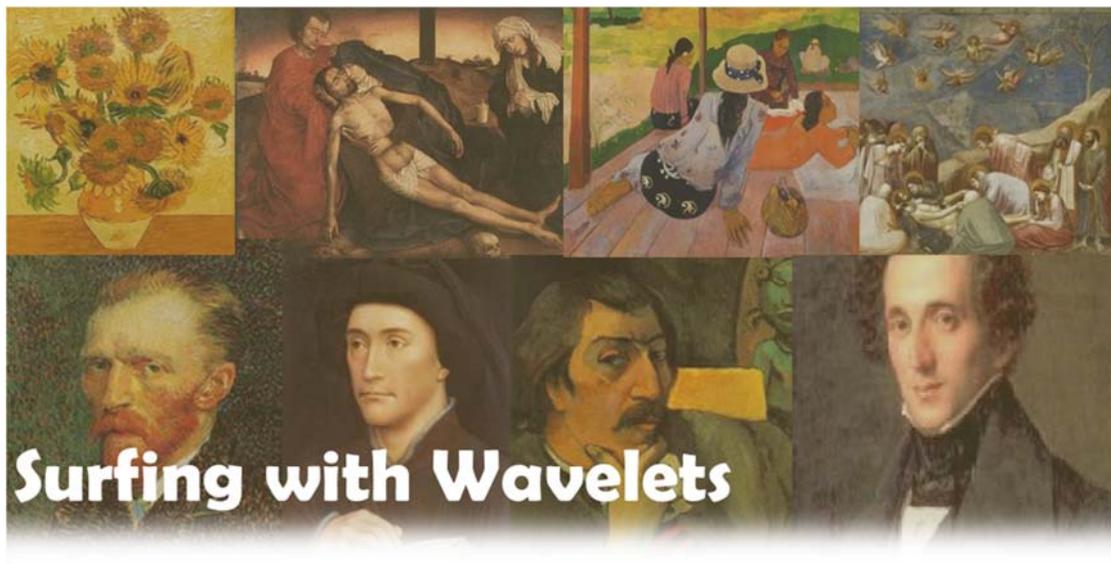


活动邀请 | 昆山杜克大学名家讲坛：“与小波共舞”

Duke Kunshan Distinguished Speaker Series | “Surfing with Wavelets”
by Professor Ingrid Daubechies



Ingrid Daubechies

Time: 4:30-5:30 pm, Dec 12th 2016

Venue: RM1079, Academic Building

Duke Kunshan Distinguished Speaker Series

“与小波共舞” —— Ingrid Daubechies 教授

杜克大学詹姆斯·B·杜克数学、电子与计算机工程讲席教授

美国文理科学院院士、美国国家科学院院士;

美国国家工程院院士

荷兰皇家艺术与科学院外籍院士

Duke Kunshan Distinguished Speaker Series

“Surfing with Wavelets” by Professor Ingrid Daubechies

James B. Duke Professor of Mathematics, Electrical and Computer Engineering, Duke University

Academician of the American Academy of Arts and Sciences

Academician of the United States National Academy of Sciences

Academician of the United States National Academy of Engineering

Academician of the Royal Netherlands Academy of Arts and Sciences

Time: December 12, 4:30-5:30 PM

12月12日下午4:30-5:30点

Location: RM1079, Academic Building

昆山杜克大学学术楼 1079 教室

Language: English with Chinese Interpretation

演讲语言：英文演讲，中文翻译

RSVP Link/报名链接: https://duke.qualtrics.com/SE/?SID=SV_8wSp333sjUZoaDr

**Kindly be noted that we'll not send confirmations. Once you registered, we'll reserve a seat for you. Thanks.*

**请注意：我们将会为注册者保留座位，不会有确认信。*



Talk Abstract

This talk gives an overview of wavelets: what they are, how they work, why they are useful for image analysis and image compression. Then it will go on to discuss how they have been used recently for the study of paintings by e.g. Van Gogh, Goossen van der Weyden, Gauguin and Giotto.

讲座首先对小波进行概述：小波是什么、如何作用、为何对图像分析和图像压缩有用。接着将会讨论小波近年来在梵高、Goossen van der Weyden、高更和乔托等人的油画研究方面的应用。

Speaker Introduction

Baroness Ingrid Daubechies is a prominent Belgian physicist and mathematician. Between 2004 and 2011 she was the William R. Kenan, Jr. Professor in the Mathematics and Applied Mathematics Department at Princeton University. In January 2011 she moved to Duke University and is currently the James B. Duke Professor of Mathematics, Electrical and Computer Engineering. She was the first woman to be president of the International Mathematical Union (2011-2014). Daubechies is best known for her groundbreaking work with wavelets which led to image compression standards now widely used in formats such as .jpg2000s, and others. Her work has also made significant contributions in the areas of signal processing, quantum mechanics, discrete geometry and applied mathematics.

Daubechies was born in Houthalen, Belgium. She entered the Vrije Universiteit Brussel (the Free University of Brussel) at 17. Daubechies completed her undergraduate studies in 1975, and obtained her Ph.D. in theoretical physics in 1980 and continued her research career at the Vrije Universiteit Brussel until 1987. Daubechies spent most of 1986 as a guest-researcher at the Courant

Institute of Mathematical Sciences, where she made her best-known discovery: she constructed compactly supported continuous wavelets that would require only a finite amount of processing, in this way enabling wavelet theory to enter the realm of digital signal processing.

From 1994 to 2010, Daubechies was a professor at Princeton University, where she was active especially within the Program in Applied and Computational Mathematics. She was the first female full professor of mathematics at Princeton. In January 2011 she moved to Duke University. In 2012 King Albert II of Belgium granted her the title of Baroness.

Daubechies has received many awards in recognition of her groundbreaking work. In 1984, she received the Louis Empain Prize in Physics, awarded once every five years to a Belgian scientist on the basis of work done before the age of 29. In 1993 she was elected to the American Academy of Arts and Sciences. In 1994 she received the American Mathematical Society Leroy P. Steele Prize for Exposition for the book *Ten Lectures on Wavelets*. In 1998, Daubechies was elected to the United States National Academy of Sciences and a Fellow of the Institute of Electrical and Electronics Engineers. And in 2015, Daubechies became a member of the National Academy of Engineering.

In 2000, Daubechies became the first woman to receive the National Academy of Sciences Award in Mathematics, presented every four years for excellence in published mathematical research. The award honored her “for fundamental discoveries on wavelets and wavelet expansions and for her role in making wavelets methods a practical basic tool of applied mathematics.”

One of her current project is collaborating with the North Carolina Museum of Art for a 14th century art restoration exhibition – “Reunited: Francescuccio Ghissi’s St. John Altarpiece” – to give viewers an idea of how the paintings must have looked when new. In her talk at Duke Kunshan University, Daubechies will discuss how wavelets have been used recently for the study of paintings by e.g. Van Gogh, Goosen van der Weyden, Gauguin and Giotto from her researches.

Ingrid Daubechies 女爵是比利时杰出的物理学家和数学家, 也是国际数学联盟第一位女性主席(2011-2014)。

从 2004 到 2011 年, 她担任普林斯顿大学数学和应用数学系威廉 R.凯南, Jr 讲席教授。2011 年 1 月, 他来到杜克大学, 现为数学、电子与计算机工程系詹姆斯·B·杜克讲席教授。她对小波研究做出了开创性贡献, 奠定了现行的图像压缩标准, 并使小波分析进入实用领域。

Daubechies 出生于比利时的豪特哈伦。17 岁时, 她进入布鲁塞尔自由大学攻读本科。1975 年, Daubechies 本科毕业, 1980 年在布鲁塞尔自由大学获得博士学位, 直至 1987 年, 她都在布鲁塞尔自由大学从事研究工作。

1986 年的大部分时间她在库朗数学科学研究所做访问研究员。在此期间, 她完成了一项重要工作: 构建了只需

有限加工的紧支撑小波，从此小波理论开始广泛应用至数字信号加工领域。

1994 到 2010 年，Daubechies 在普林斯顿大学担任教授，她积极活跃于应用和计算数学领域。她是普林斯顿第一位女性数学正教授。2011 年 1 月，她加入杜克大学。2012 年比利时国王阿尔贝二世授予她女爵头衔。

Daubechies 因其开创性的工作得到过许多嘉奖。1984 年，她获路易斯昂潘物理学奖，此奖项每五年授予一位在学科基础领域做出杰出贡献的青年比利时物理学家。1993 年她当选美国文理科学院院士。1994 年她荣获美国数学学会勒罗伊·斯蒂尔奖，以嘉奖其著作《小波十讲》。1998 年，Daubechies 当选美国国家科学院院士和美国电气和电子工程师协会会员。2015 年，当选为美国国家工程院院士。

2000 年，Daubechies 成为第一位获得国家科学院数学奖的女性，此奖项每 4 年颁发一次以表彰应用数学领域的杰出人才。颁奖词这样写到：“为其对小波的开创性发现和推广应用做出的杰出贡献以及将小波研究方法发展为应用数学领域基本工具所扮演的重要角色。”

目前她与北卡罗莱纳州艺术博物馆合作，致力于 14 世纪艺术品恢复的工作——“Francescuccio Ghissi 的圣约翰事迹绘画一组的修复”，部分研究成果将以展览的形式向游客们展示画作初始的模样。

在此次昆山杜克大学的讲座中，Daubechies 教授将对小波进行概述并讨论小波近年来在绘画研究领域的应用。

Duke Kunshan University
2016/11/29