

数学与系统科学研究院

计算数学所学术报告

报告人: **Colin Macdonald**

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报告题目:

Numerical Computation on Curved Surfaces

邀请人: 许现民 副研究员

报告时间: **2019 年 4 月 17 日 (周三)**

上午 10:30-11:30

报告地点: **科技综合楼三层**

301 报告厅

Abstract:

Despite the appearance sometimes given in textbooks, not all differential equations are posed on straight lines and rectangles. This talk will introduce some techniques based on simple finite differences and interpolation for computing numerical solutions to partial differential equations posed on curved surfaces and other general domains.

One application is modelling animal coat pattern formation using reaction-diffusion equations. We'll also look at some other examples such as curve evolution, bulk-surface coupling, point clouds, visual effects, image processing, and mesh generation.

Biography:

Colin Macdonald works on numerical analysis and scientific computing. Colin completed his PhD in 2008 with Steve Ruuth (SFU), then started a postdoc with Stan Osher (UCLA), before becoming an Instructor at Oxford in 2009. He returned to Canada in 2015, and is currently an associate professor at the University of British Columbia. Colin has a second-place Leslie Fox prize in numerical analysis from 2009 and was the 2010 recipient of the SIAM Richard C.~DiPrima prize in applied mathematics.

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