



APPLIED MATHEMATICS COLLOQUIUM: Modeling climate change: A dynamical systems approach

Date:

10/7/2022

Time:

3:00 PM-5:20 PM

Link:

SSB 170

Alejandro Aceves

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About The Speaker:

He earned his MS in Applied Mathematics at the California Institute of Technology in 1983 and his PhD in Applied Mathematics, University of Arizona in 1988. Between 1989 and 2008, he moved through the ranks from Assistant to Full Professor of Mathematics at the University of New Mexico, where he held the position of Chair of the Department of Mathematics and Statistics between 2004 and 2008. He is currently Professor and former Department Chair of Mathematics (2016-2021) at Southern Methodist University. He has mentored numerous PhD students and postdoctoral fellows and has had visiting positions including Brown University, Universita di Brescia, Italy, University of Limoges and University of Rouen, France and Deusto Tech, Bilbao and Columbia University. He has been a visiting scientist at many research institutions including the Los Alamos National Laboratory, the US Air Force Laboratory, Bell Laboratories. His main research area has been in modeling in Nonlinear Optics and Photonics and more recently climate change. His research has been funded by the US National Science Foundation, Department of Energy and Department of Defense. In 2016, he was elected Fellow of the Optical Society of America (OSA) and in 2021, he was elected Fellow of the Society for Industrial and Applied Mathematics (SIAM) and an SMU Ford Fellow.

Abstract:

As we all know, research on climate models is an imperative of our times. Applied Mathematics has much to offer in helping understand mechanisms for climate change. While the complexity of climate models demand intense computational efforts, there are scenarios where simpler, dynamical systems based models, can give some insight. This is the case of the Atlantic Meridional Overturning Circulation (AMOC) system, which will be the central topic of this presentation.

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