

## סמינר - SEMINAR

הנדך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ב' 29.10.2018 (כ' בחשוון, תשע"ט), בבניין דן קאהן, אודיטוריום 1, 14:30

מרצה:

**Karan Venayagamoorthy, Ph.D.**

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על הנושא:

### **On the Prediction of Diapycnal Mixing in Stably Stratified Turbulence**

The seminar will be given in English

להלן תקציר ההרצאה:

The understanding and quantitative prediction of diapycnal (irreversible) mixing of density and momentum in stably stratified flows remains an important ongoing challenge. This is not surprising given the complexity introduced into most geophysical flows by factors such as density stratification, complex topography and a host of physical phenomena associated with such flows.

However, accurate prediction of the small-scale irreversible mixing induced by turbulent processes is critical for many applications such as the prediction of heat and salt fluxes; and global circulation in oceanic flows. From a practical perspective, there is a critical need to obtain accurate prediction of turbulent heat and momentum fluxes using indirect measurements in the field. Indirect methods for estimating mixing rates require for the inference of two key quantities namely: the rate of  $f$  dissipation of turbulent kinetic energy, and the mixing efficiency  $R_f$ , which is a measure of the amount of turbulent kinetic energy that is irreversibly converted into background potential energy, respectively. This talk will bring to focus some traditional (indirect) methods used to infer diapycnal mixing rates in stably stratified turbulence and highlight some new insights that may provide a basis for more robust and unifying prediction of turbulent mixing.

Dr. Karan Venayagamoorthy is the Borland Professor of Fluid Mechanics in the Department of Civil and Environmental Engineering at Colorado State University. He received his BScEng (summa cum laude) and MScEng (cum laude) degrees in Civil Engineering from the University of Natal in Durban, South Africa and his PhD in Civil and Environmental Engineering from Stanford University.

He is a recipient of several awards including the 2014 APS-DFD Frenkiel Award, NSF CAREER Award and the Office of Naval Research Young Investigator Award in 2012. He also received the 2011 CSU Alumni Best Teacher Award. His research interests focus on environmental fluid mechanics, geophysical fluid dynamics, hydraulics and hydrology using computational flow modeling in combination with theoretical and experimental methods.

מארח: פרופ"מ מתיו סאס

בברכה,

2019/11/11

מרכז הסמינרים