

数学与系统科学研究院  
计算数学所网络学术报告

报告人： 彭伟 助理研究员

( 助理研究员 )

报告题目：

**IDRLnet: A Physics-Informed  
Neural Network Library**

邀请人： 优化与应用研究中心

报告时间： 2021 年 11 月 5 日 (周五)

上午 9:30-10:30

报告工具： 腾讯会议 (ID: 158 245 214)

## **Abstract:**

**Physics Informed Neural Network (PINN) is a scientific computing framework used to solve both forward and inverse problems modeled by Partial Differential Equations (PDEs). This paper introduces IDRLnet, a Python toolbox for modeling and solving problems through PINN systematically. IDRLnet constructs the framework for a wide range of PINN algorithms and applications. It provides a structured way to incorporate geometric objects, data sources, artificial neural networks, loss metrics, and optimizers within Python. Furthermore, it provides functionality to solve noisy inverse problems, variational minimization, and integral differential equations. New PINN variants can be integrated into the framework easily. Source code, tutorials, and documentation are available at <https://github.com/idrl-lab/idrlnet>.**

## **报告人简介:**

彭伟，军事科学院国防科技创新研究院助理研究员，2019 年底博士毕业于国防科技大学计算数学专业。目前研究方向是人工智能在多学科设计优化中的应用。智能优化与鲁棒学习实验室成员，是国内首个内嵌物理知识神经网络开源库 IDRLnet 的主要开发者之一。

# **欢迎大家参加！**