Engineering vs. neuroscience. Rapid eye-movements: their properties.

报 告 人：John van Opstal 教授

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主办单位：中国矿业大学机电工程学院

报告人简介：荷兰顶尖研究型大学拉德堡德大学（Radboud University Nijmegen）教授，欧洲科学院院士（Member of the Academia Europaea）。从事机器人 3D 眼头运动控制、多感官注视控制、声源定位等研究，于 Science、Nature Neuroscience、PNAS 等国际顶级期刊发表学术论文 150 余篇，Google Scholar 总引用近万次，H 指数 58。近十年，主持了欧盟第七框架计划（FP7）玛丽·居里基金（350 万欧元，2014-2017）、STW-perspective 项目（400 万欧元，2016-2021）、ERC 高级研究基金（250 万欧元，2017-2022）、荷兰科学研究会项目（130 万欧元，2024- 2028）等 1000 余万欧元科研项目。

报告内容简介： In my first lecture, I will introduce rapid eye movements, called saccades, and discuss their function and major behavioral and neural control properties. We will see that saccades result from pulse-step control signals delivered to the six pools of oculomotor neurons (the neurons that directly lead to contractions of the six eye muscles, and hence produce the eye movement trajectory). We will also learn that the neural system responsible for saccades has to be nonlinear and that they can be described as single-axis rotations. In addition, we will find that the saccadic system embeds a spatial (i.e., vectorial, topographic map) to temporal (Cartesian, instantaneous force) transformation, and I will identify the respective neural structures for this transformation.