



**Einladung**  
zum  
**Seminar des Instituts für Quantenphysik**

**Prof. Dr. H. Vincent Poor**  
Princeton University

***Wireless Communications: Information  
Theoretic Paths Forward***

Donnerstag, den 12.10.2017  
10:00 Uhr  
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**Abstract:** The past three decades have seen the development of widespread consumer mobile communications and other wireless applications, which today impact the lives of billions of people – indeed most people alive today. Information theory has provided fundamental guidance for the evolution of wireless networks, and in turn wireless communications has provided a wealth of new problems in information theory. Some of the most remarkable advances in this field have involved new ways of exploiting the physics of wireless channels, and this lecture will focus on such advances, beginning with a brief overview of some key developments in the recent evolution of this field, and then focusing on information theoretic approaches to two issues of particular relevance to emerging applications such as the Internet-of-Things and autonomous driving: namely, physical-layer security, and reliable communication in the non-asymptotic regime of short codes. The basic principles underlying these approaches will be described, as well as recent developments and open problems.