

Ankündigung

Einladung zum Vortrag

Am **Donnerstag, dem 26.04.2012, 13:30 Uhr** spricht

Professor Dr. Martin Roth, Leibniz-Institut für Astrophysik Potsdam (AIP)

im Rahmen eines Institutskolloquiums.

Titel: “Instrumentation in Astrophysics – the thorny road of innovation”

Abstract:

Astrophysics is currently experiencing what is sometimes called a „Golden Age“, given the enormous progress in our understanding of the large scale structure of the universe, its creation and evolution, and the physics of its constituents, like stars, gaseous nebulae, and dust, that all together form galaxies, and exotic objects like neutron stars, supermassive black holes, and so forth. Next to the predictive power of numerical simulations on super-computers, the technology of modern ground and space-based telescopes and their focal plane instruments is to a large part responsible for this progress, soon expected to flourish with a new generation of so-called “Extremely Large Telescopes”, with apertures of up to 40m in diameter. I shall discuss the role of instrumentation and detector technologies, with an emphasis on state-of-the-art fibre-coupled spectroscopy, and the importance of what is called the “multiplex advantage” in observational astronomy. A particular focus will be on the AIP-built PMAS integral field spectrograph, which is based on a high-performance apochromatic, fully dioptric optical system, delivered by Carl Zeiss Jena in 1999. More than 10 years after commissioning at the Calar Alto 3.5m Telescope in southern Spain, this spectrograph is still the most powerful instrument of its kind world-wide, and a useful example to study the difficult process of introducing innovative concepts on a competitive market, in this case the astronomical user community. Along those lines, I shall explain the astronomical breakthrough and remarkable success of the technique of integral field (“3D”) spectroscopy, delivering simultaneously hundreds (or thousands) of spectra within a spatially resolved two-dimensional field-of-view. The overlap with similar techniques in other disciplines, often referred to as “hyperspectral imaging”, will be discussed, and the possible application of 3D spectroscopy to areas like life science and medicine addressed.

Der Vortrag findet im IPHT-Sitzungssaal statt.

Zu diesem Vortrag sind Mitarbeiter, Studenten und Gäste herzlich willkommen.

Dr. Wolfgang Fritzsche