

**Prize Talk**

PV X Wed 12:00 B Audimax

**New theoretical challenges in quantum optics and quantum information** — ●IGNACIO CIRAC — Max-Planck-Institut für Quantenoptik, Hans-Kopfermann-Str. 1, 85748 Garching

In the last years, quantum optics and quantum information have

merged with other areas of science, like condensed matter or high-energy physics. This opens various scientific questions and poses new theoretical challenges. In this talk I will give a brief overview of some of the areas of research that have emerged in that context, like the study and applications of emitters close to structured baths, and the development of theoretical tools to address many-body quantum problems.