Colloquium Notice

Michael Sumetsky
OFS Laboratories

*Localization of light in an optical fiber: cylinder, conical and bottle microresonators*

A slightly nonuniform and even an ideally uniform optical fiber can perform as a high Q-factor optical microresonator which hosts different types of strongly localized whispering gallery modes (WGMs). These modes are described theoretically and observed experimentally. First, it is shown that a very long (translationally symmetric) lossy dielectric optical microcylinder possesses localized modes. The Q-factor of these WGMs is only 2.5 times smaller than the Q-factor of WGMs in a spherical microresonator fabricated of the same material. Next, localization of WGMs in a cone with a small half-angle is demonstrated. The cylindrical and conical modes are found to be common in conventional optical fibers. The developed theory of these modes is in excellent agreement with experiment. Finally, the cylinder and conical modes are compared with bottle WGMs that were investigated previously.

Monday
**November 29, 2010**
Starts at 12:15 PM
Coffee at 12:00 PM
Physics Conference Room, SB B326