

Colloquium Notice

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Localization of light in an optical microcapillary induced by a droplet

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We show experimentally and theoretically that whispering gallery modes in a silica microcapillary can be fully localized (rather than perturbed) by evanescent coupling to a water droplet and, thus, form a high-quality-factor microresonator. The spectra of this resonator, measured with a microfiber translated along the capillary, present a hierarchy of resonances that allow us to determine the size of the droplet and variation of its length due to the evaporation. The discovered phenomenon of complete localization of light in liquid-filled optical microcapillaries suggests a new type of microfluidic photonic device as well as an ultraprecise method for microfluidic characterization.
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Monday

September 17, 2018

Starts at 12:15 PM

Coffee at 12:00 PM

Physics Conference Room, SB B326