

# Bottle microresonator with actively stabilized evanescent coupling

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The evanescent coupling of light between a whispering-gallery-mode bottle microresonator and a sub-wavelength-diameter coupling fiber is actively stabilized by means of a Pound-Drever-Hall technique. We demonstrate the stabilization of a critically coupled resonator with a control bandwidth of 0.1 Hz, yielding a residual transmission of  $(9 \text{ pm}^3) \times 10^{-3}$  for more than an hour. Simultaneously, the frequency of the resonator mode is actively stabilized.

Comments: 3 pages, 3 figures. Minor changes in the text, references added, typo in figure corrected

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