AN UNSTABLE CONFOCAL RESONATOR APPLIED TO C.W. CAVITY RING-DOWN

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We have begun to investigate cavity ring-down in the unstable region of a confocal resonator comprised of super polished high reflectivity mirrors of nearly equal radii of curvature. The unstable region is smoothly accessed by adjusting the resonator spacing so that the center of curvature of one mirror, c1, lies between the mirrors while that of the second mirror, c2, lies outside the mirrors. Diffraction loss which is maximum at the confocal position is determined from the resonator decay time.