"A Zero-Area Sagnac Superluminal Ring Laser for High-Sensitivity Accelerometry"

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Underway in our laboratory is an effort to develop a wide variety of high-sensitivity metrological devices. By inserting a gain medium into a fast-light cavity operating near the Ideal White-Light Cavity (WLC) condition, a five-to-six order-of-magnitude sensitivity enhancement can potentially be achieved inside an accelerometer with a Zero-Area Sagnac geometry. During this talk I will describe the basic concepts behind fast-light enhancement, go over the experimental details crucial to making this geometry possible, and provide a progress report detailing the experimental pitfalls we have run into in trying to make this device operate, as well as how we are dealing with these problems.