Control of ring lasers by means of coupled cavities

Summary form only. Coupling of optical cavities offers a means of controlling the properties of one cavity (e.g. a laser) by making adjustments to another, external cavity. In this contribution we consider a unidirectional ring laser (bow-tie laser) coupled to an external ring cavity. Using different configurations we can control the out-coupling from the ring laser thereby influencing the threshold and the circulating power in the different ring cavities. This may be used to obtain the best balance between the passive losses and a nonlinear loss such as e.g. conversion to the second harmonic or operation of an optical parametric oscillator.