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Coherent control of Casimir force in chiral medium JABIR HAKAMI, QINGQING SUN, SUHAIL ZUBAIRY, Texas A&M University — Chirality has been previously reported as a way to obtain repulsive Casimir forces [PRL 103, 103602 (2009)]. Here we propose the coherent control of the Casimir force between two identical atomic chiral media. We apply a magnetic field to split the detuning as well as the refractive indexes for the two circular polarizations, which leads to chirality. Changing the strength of this magnetic field gives us different Casimir forces, and possibly a switch between attractive and repulsive forces.

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