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Topological polaritons from non-topological quantum-wells in an optical cavity TORSTEN KARZIG, California Institute of Technology, NETANEL LINDNER¹, Technion, GIL REFAEL, California Institute of Technology — We study the formation of topological polaritons from semiconductor excitons coupled to cavity photons. Oscillating classical electromagnetic fields can turn a trivial band structure into a Floquet topological insulator. In a similar spirit cavity photons can induce topology when coupling to otherwise trivial excitons. We discuss the necessary ingredients to lend the polaritons a non-trivial topology through a “winding” coupling of the excitons to the photons. One hallmark signature of the topological polaritons are chiral edge modes which allow for unidirectional photon propagation as a part of the exciton-photon edge mode.

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