Theory of polariton condensation
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Lately, some novel experiments with planar optical microcavities make use of the mixing of excitons with photons to create composite bosons called polaritons that have a very light mass, and are thus a good candidate for high-temperature Bose condensation. Good evidence for spontaneous coherence has now been obtained.\(^1\) There are special issues to resolve\(^2\) considering the effects of low dimensionality, disorder, strong interactions, and especially strong decoherence associated with decay of the condensate into environmental photons\(^3\) — since the condensate is a special kind of laser.