Evaporative Instability in Binary Mixtures[1] RANGA NARAYANAN, ERDEM UGUZ, University of Florida — In this talk we depict the physics of evaporative convection for binary systems in the presence of surface tension gradient effects. Two results are of importance. The first is that a binary system, in the absence of gravity, can generate an instability only when heated from the vapor side. This is to be contrasted with the case of a single component where instability can occur only when heated from the liquid side. The second result is that a binary system, in the presence of gravity, will generate an instability when heated from either the vapor or the liquid side provided the heating is strong enough. In addition to these results we show the conditions at which interfacial patterns can occur.

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