Marangoni instability in an evaporating layer of binary liquid in the presence of the Soret effect[1] ALEXANDER ORON, Technion - Israel Institute of Technology, Haifa 32000 ISRAEL, ROBERT P. BEHRINGER, JIE ZHANG, Duke University, Durham, NC 27708 — The one-sided model of evaporation is applied to the investigation of the Marangoni instability in an evaporating layer of binary liquid in the presence of the Soret effect. In the limit of both small evaporation and Lewis numbers, the time evolution of the base state for the solute concentration is studied numerically under assumption of non-deformability of the liquid-gas interface. Linear stability analysis of the time- dependent base state is carried out. In the limit considered here, the solutocapillary effect is found to be dominant with respect to the thermocapillary effect.

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