

Unsteady Heating of Rayleigh-Benard Convection

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The linear thermal instability of a horizontal fluid layer with time-periodic temperature distribution is studied with the help of the Floquet theory. The time-dependent part of the temperature has been expressed in Fourier series. Disturbances are assumed to be infinitesimal. Only even solutions are considered. Numerical results for the critical Rayleigh number are obtained at various Prandtl numbers and for various values of the frequency. It is found that the disturbances are either synchronous with the primary temperature field or have half its frequency. — *2000 Mathematics Subject Classification:* 76E06, 76R10.

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