Double Diffusive Convection in the Black Sea:
Distribution, Sources and Mechanisms

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The entire Black Sea is a unique double diffusive environment in its entire water column excluding the the upper part of the convectively formed Cold Intermediate Water (CIW) core and the geothermally driven bottom convective layer. The sources, scales and mechanisms of fine structures and their roles in the mixing of the interior are identified. The Mediterranean water inflow drives intrusions in this environment and generates interior mixing.

The smaller scale disturbances are confined above the base of the CIW, driven by atmospheric forcing. Staircase structures appear at the base of the CIW. A peculiar thermostad appears at $\sim 500m$. Fine structures are observed here and in deep water, especially near the basin boundaries.

The transports of heat and salt upwards from the bottom convective layer appears to be determined by double diffusive fluxes. Attempts to develop the correct parameterization of the vertical fluxes, in different depth regions are described.

1. Chapman Conference on
Double Diffusive Convection

2. Oral presentation

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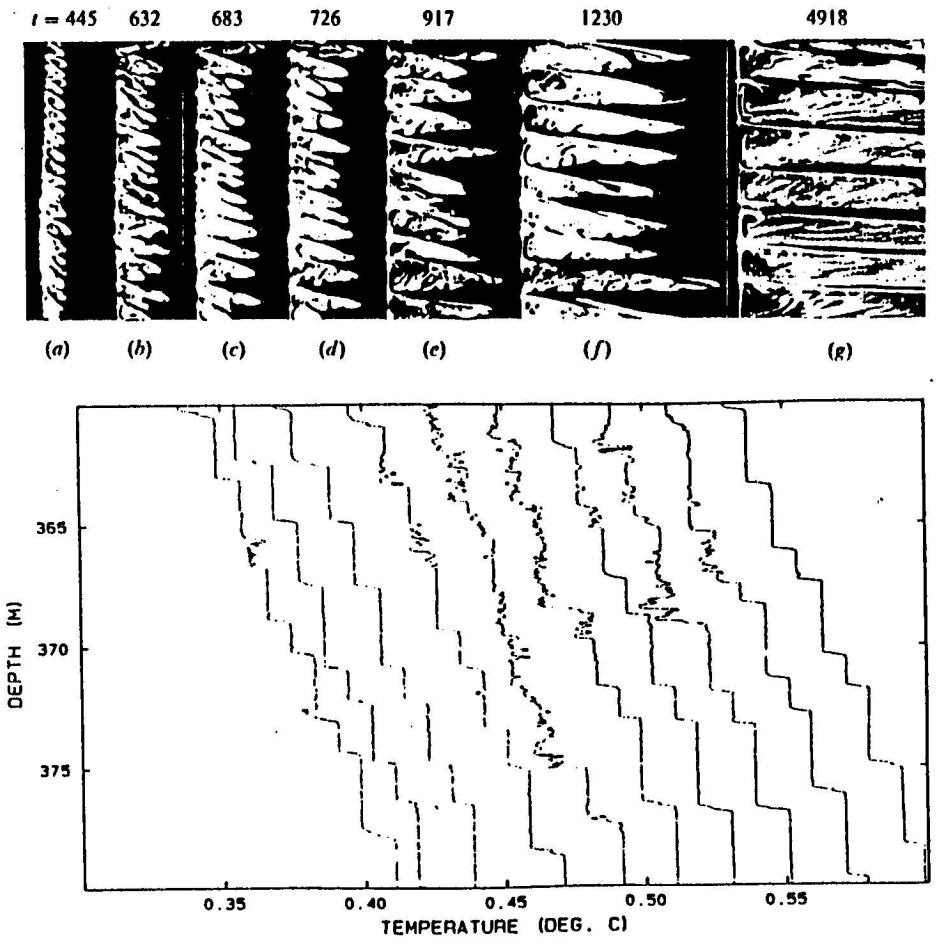

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