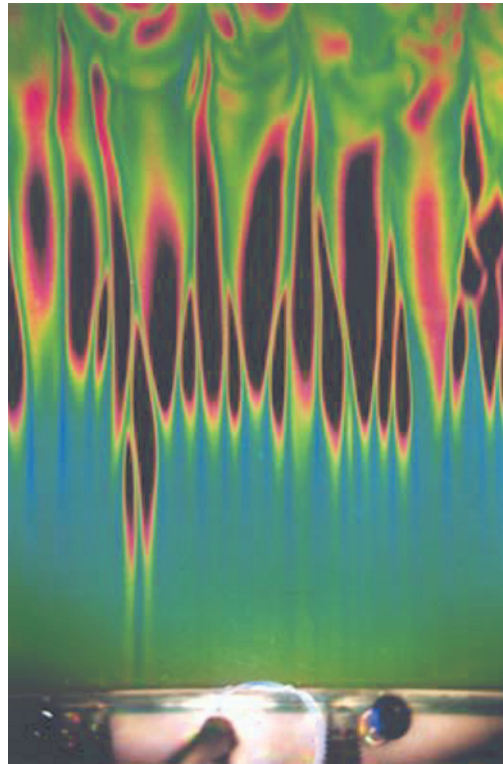


2. Natural convection flow with longitudinal vortices and transition to turbulence

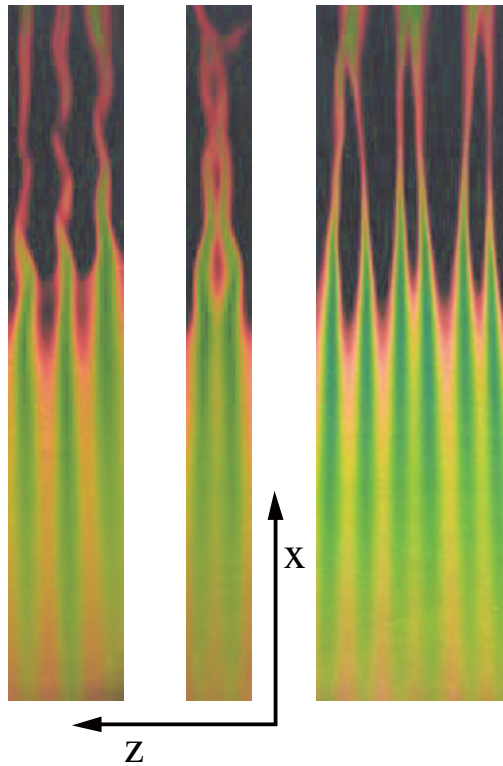
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TLC visualization of the surface temperatures of a heated inclined ($\gamma = 40^\circ$ against the vertical) plate in natural convection. The x direction is the downflow direction. The laminar and longitudinal vortices produce a regular pattern of the surface temperatures in the down flow direction. Further down stream these vortices become unstable and breakdown into turbulence. The colors indicate increasing temperatures with changes from red to yellow, green and blue.



Secondary instabilities of a natural convection longitudinal vortex flow

TLC visualization of the surface temperatures of a heated inclined ($\gamma = 20^\circ$ against the vertical) plate in natural convection. The x direction is the downflow direction.

The picture on the left shows a sinusoidal mode, in the center the varicose mode is visualized and on the right a merging of neighbouring vortices is shown.