

**NUMERICAL INVESTIGATION OF THE INFLUENCE OF WALL TEMPERATURE  
MODULATION ON INSTABILITY IN A BRIDGMAN CONFIGURATION**

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**ABSTRACT** This paper presents a numerical study of thermal fluctuations in a Vertical Bridgman cavity (VB). The VB when heated from the top is characterized by the stability of the flow regime maintained for the larger range of Rayleigh numbers comparing with an Inverted Bridgman configuration (IVB) heated from below. In order to qualify the effect of thermal modulation on the heat and flow transfers, a high Rayleigh number ( $Ra=4.10^5$ ) is considered here. The results show that the thermal oscillations at low-frequency can destabilise the flow regime. A characteristic frequency is identified to minimize the average thermal transfer on the cold wall depending on the modulation amplitude.