

## Hidden Asymptotics for the Weak Solutions of the Strongly Stratified Boussinesq System Without Rotation

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### **Abstract**

It is known that when the Froude number goes to zero, the solutions of the strongly stratified Boussinesq system tend towards those of a 3D-Navier-Stokes-type system (but with only two components). Surprisingly, this limit system does not depend on the thermal diffusivity  $\nu' > 0$ . In this talk we explain how to modify the initial data in order to obtain a limit system that really depends on  $\nu'$ . We will first present the system, then formally obtain a general limit system that we will validate by choosing unconventional initial data. This limit induces a structure that will enable us to separate the solutions of the initial system into two parts, which we will study separately. The convergence will require new Strichartz estimates.