



On the uplift of Mediterranean abyssal water masses when crossing the Sicily Channel sill, a climatic problem (Central Mediterranean Sea)

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We analyze in this study a remarkable uplift of bottom Mediterranean water (≈ 800 m deep, or also more) flowing westward and crossing the sill of the Channel of Sicily (≈ 350 m depth) and then also the sill of Gibraltar. This remarkable uplift is clearly related to a Bernoulli effect but we claim that it is remarkably enhanced by frictional effects. We therefore examine the equations and discuss a simple analytic model of such dynamics. We stress that this is a very general effect that can happen in any marine strait or/and in periferical basins. We moreover discuss the total heath stored in the Mediterranean Sea in relation with such uplift.