Dual Formulation of Second Order Target Problems

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We provide a new point of view for the formulation of second order stochastic target problems. The main new ingredient is to modify the reference probability so as to allow for different scales. Our main result is a dual formulation of this control problem as a supremum of the solutions of standard backward stochastic differential equations. In particular, in the Markov case the dual problem is immediately seen to correspond to a fully nonlinear PDE, thus avoiding the heavy technicalities in our previous work.