1.5em 0pt

Pseudocode for NUTS for RMHMC

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Algorithm 1 NUTS termination criterion for RMHMC(softabs)

▷ Input: $p_{t_1}, \ldots, p_{t_L}$, where p_{t_1} and p_{t_L} are the momenta evaluated at the two ends of a trajectory of length L, also a subtree in the balanced binary tree in the multiplicative scheme. $\Lambda(t_1), \Lambda(t_L)$, where $\Lambda(\cdot)$ is the inverse of the softabs map of the Hessian evaluated at that point.

function TERMINATION(p, Λ)

$\rho = \frac{1}{\sum_k \delta t_k} \sum_{i=1}^{L} p(t_i)$

$T_1 = Indicator(p(t_L)^T \Lambda(t_L) \rho < 0)$

$T_2 = Indicator(-p(t_1)^T \Lambda(t_1) \rho < 0)$

if $T_1 = TRUE$ and $T_2 = TRUE$ **then**

return $TRUE$

else

return $FALSE$

end if