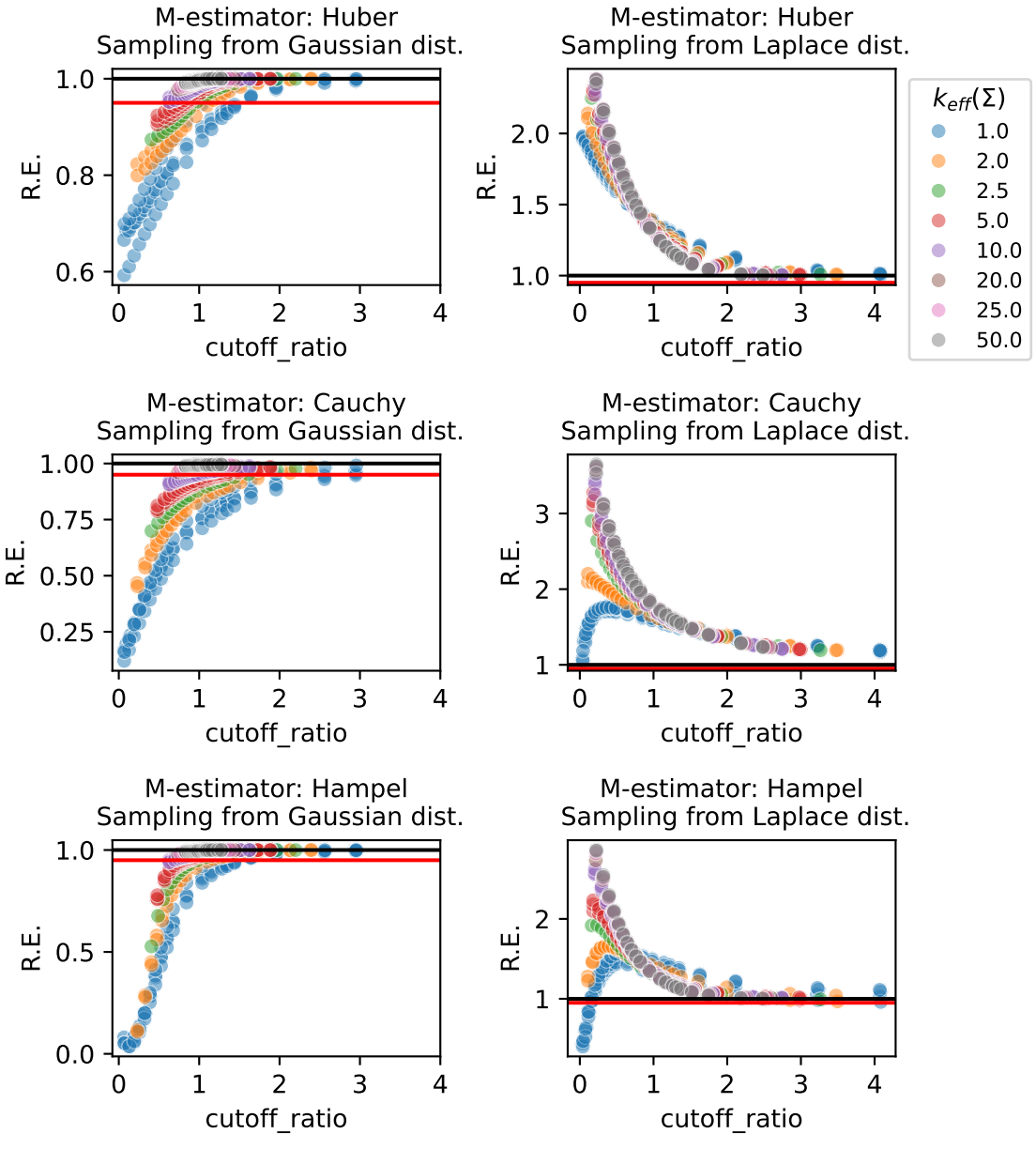

cutoff_ratio = $Cutoff / \sqrt{tr(\Sigma)}$