



# Differential Relative Entropy

## 1 Why

We want relative entropy for densities.

## 2 What

The differential relative entropy of a second density with respect to the first density is the cross entropy of the second with respect to the first less the differential entropy of the first.

### 2.1 Notation

Let  $f$  and  $g$  be densities. The relative entropy of  $f$  with respect to  $g$  is

$$h(g, f) = h(f)$$