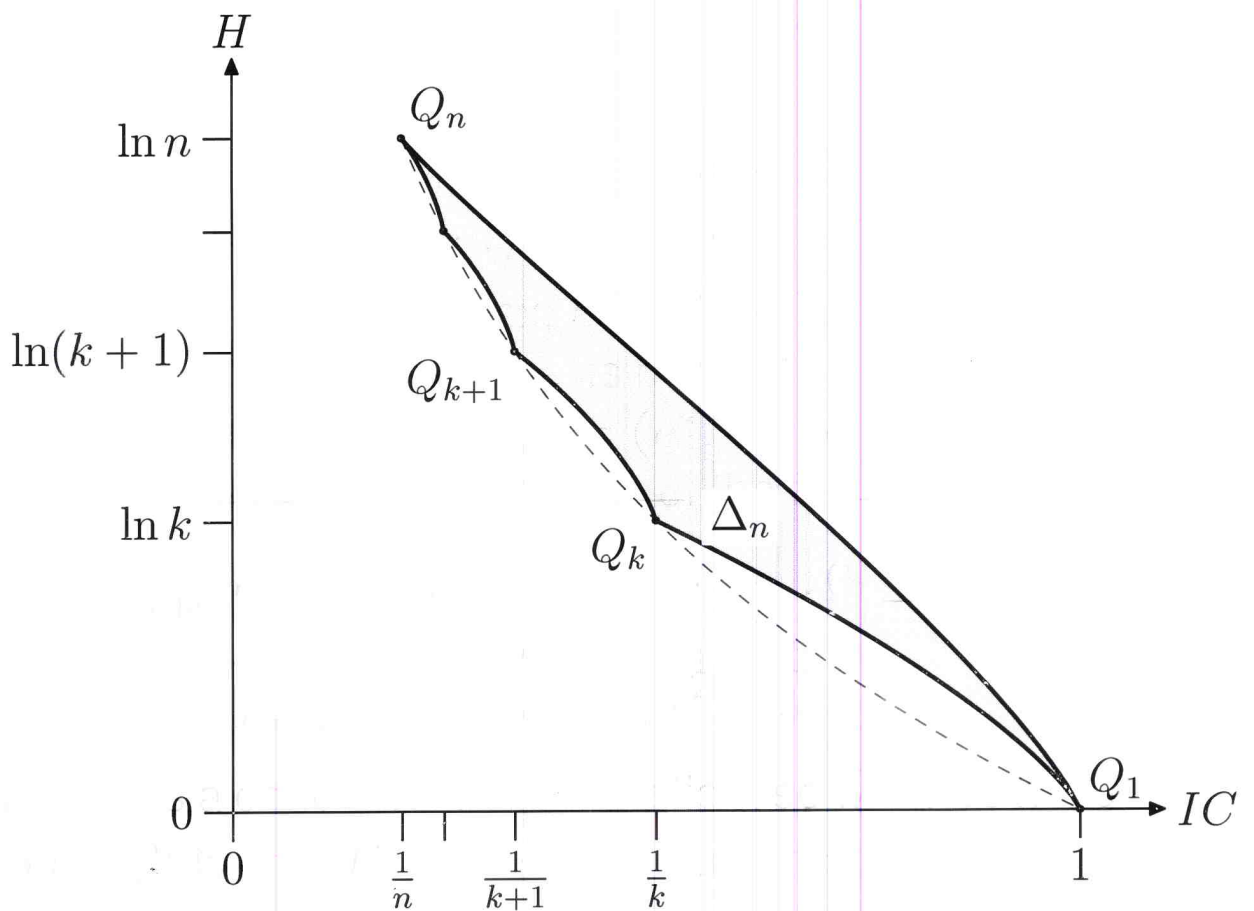


## Some entropy inequalities

Consider the **(IC, H)-diagram** consisting of all points  $(IC(P), H(P))$  where  $IC = \sum p_i^2$ ,  $H = -\sum p_i \ln p_i$ :



Let  $Q_k = (\frac{1}{k}, \ln k)$ . Then  $Q_k \in \Delta$  for all  $k \geq 1$  and the  $Q_k$ 's are the only points in the diagram on the curve  $y = -\ln x$ . Other points lie above.