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(α) and (r,s)-Power Divergences

We define the (α) and (r,s)-power divergences that can be regarded as the generalized Kullback-Leibler divergence.

$$D_{KL}(x,y) = \sum_{i=1}^{n} x_i \ln \frac{x_i}{y_i}$$

We explore their relationship with various other entropy's and divergences using limits. We also study and determine their geometric properties such as continuity and convexity. Finally, using the positive and negative definite kernels, we investigate the metric property of our (r,s)-power divergences.