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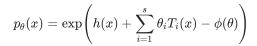
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log partition function of exponential family

Asked 6 years, 1 month ago Active 6 years, 1 month ago Viewed 1k times



In an exponential family





is the log partition function

$$\phi(heta) = \log \int \exp \Biggl(h(x) + \sum_{i=1}^s heta_i T_i(x) \Biggr)$$

always positive?

probability statistics

asked Oct 23 '13 at 22:44



1 Answer



No. Take $f(x) = \lambda e^{-\lambda x}$, the exponential distribution. Then $\phi = -\log(\lambda)$ and $\lambda > 1$ gives you a negative ϕ and $0 < \lambda < 1$ gives you a positive ϕ .

3



edited Oct 23 '13 at 23:24

answered Oct 23 '13 at 23:16





▲ Is the sign always constant? - Wintermute Oct 23 '13 at 23:21

@mtiano see edit. – Alex R. Oct 23 '13 at 23:24

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