

Unifying Theory of GLMs (Part II)

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Exponential dispersion family

It is often convenient to write the exponential family as an **exponential dispersion model (EDM) family** to provide connections to applied analysis that we have covered.

Definition of the EDM family

Distributions in the EDM family have a probability function

$$P(y; \theta, \phi) = a(y, \phi) \exp\left\{\frac{(y\theta - k(\theta))}{\phi}\right\} \quad (1)$$