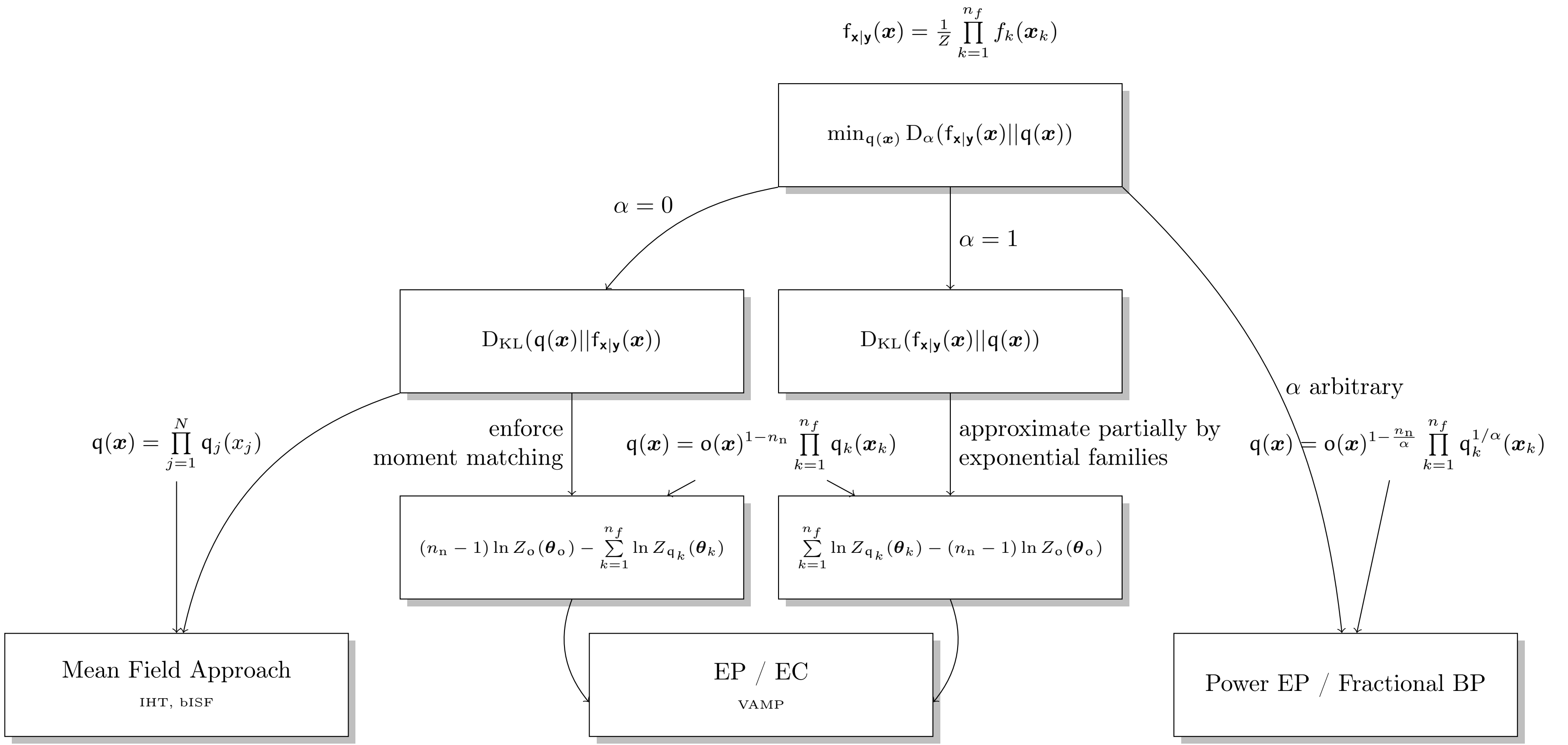

$f_{x|y}(\boldsymbol{x}) = \frac{1}{Z}\prod_{k=1}^{n_f} f_k(\boldsymbol{x}_k)$
$\min_{q(\boldsymbol{x})} D_\alpha(f_{x|y}(\boldsymbol{x})||q(\boldsymbol{x}))$
$\alpha = 0$
$\alpha = 1$
α arbitrary
$D_{KL}(q(\boldsymbol{x})||f_{x|y}(\boldsymbol{x}))$
$D_{KL}(f_{x|y}(\boldsymbol{x})||q(\boldsymbol{x}))$
$q(\boldsymbol{x}) = \prod_{j=1}^{N} q_j(x_j)$
enforce moment matching
$q(\boldsymbol{x}) = o(\boldsymbol{x})^{1-n_n}\prod_{k=1}^{n_f} q_k(\boldsymbol{x}_k)$
approximate partially by exponential families
$q(\boldsymbol{x}) = o(\boldsymbol{x})^{1-\frac{n_n}{\alpha}}\prod_{k=1}^{n_f} q_k^{1/\alpha}(\boldsymbol{x}_k)$
$(n_n - 1)\ln Z_o(\boldsymbol{\theta}_o) - \sum_{k=1}^{n_f}\ln Z_{q_k}(\boldsymbol{\theta}_k)$
$\sum_{k=1}^{n_f}\ln Z_{q_k}(\boldsymbol{\theta}_k) - (n_n - 1)\ln Z_o(\boldsymbol{\theta}_o)$
Mean Field Approach
IHT, bISF
EP / EC
VAMP
Power EP / Fractional BP