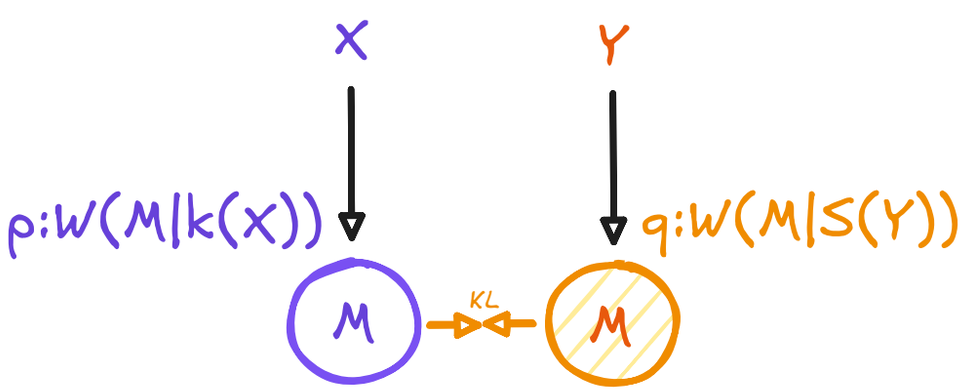
ProbDR

Likelihood View

$$S \sim \text{Wishart}(k) \rightarrow$$
$$\Gamma \sim \text{Wishart}(k^{-1}) \rightarrow S \sim \text{Wishart}^{\{-1\}}(k)$$

Variational View



The Specifics

algo	S / Γ		cov	
dp-PCA	lin	S: YY^T/d	lin	$XX^T + vI$
dp-MCA	non-lin	Γ: $(YY^T/d)^{-1}$	lin	$XX^T + vI$
RndPrj	lin	S: $YZZ^TY^T/k + vI$	lin	$XX^T + vI$
Proj	non-lin	S: $\phi(Y)\phi(Y)^T + vI$	lin	$XX^T + vI$
GPLVM	lin	S: YY^T/d	non-lin	$K(X, X')$
KPCA	non-lin	S: $K(Y, Y') + vI$	lin	$XX^T + vI$
Isomap	non-lin	S: $f(L)$	lin	$XX^T + vI$
LapEigm	non-lin	Γ: L	lin	$XX^T + vI$
LLE	non-lin	Γ: $\underset{L}{\text{argmax}}\ I(L, Y)$	lin	$XX^T + vI$
C(t-S)NE	non-lin	Γ: L	non-lin	$K(X, X')$