

MAP Optimization with NFs

$$\operatorname{argmin}_{\mathbf{x}} \frac{1}{2} \|\mathbf{A}\mathbf{x} - \mathbf{d}\|_2^2 + \log R(\mathbf{x})$$

Reparametrize optimization with trained generative network $\mathbf{x} = G_{\theta}(\mathbf{z})$

Data misfit becomes $\|\mathbf{A}\mathbf{x} - \mathbf{d}\|_2 = \|\mathbf{A}G_{\theta}(\mathbf{z}) - \mathbf{d}\|_2$

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Since latent \mathbf{z} is gaussian the regularization is directly given $\log R(\mathbf{z}) = \|\mathbf{z}\|_2$