

$$- 2\hat{\text{df}}/n)\|\mathbf{r} + \text{tr}[\mathbf{\Sigma}\mathbf{A}]\psi(\mathbf{r})\|^2/n + \text{tr}[\mathbf{\Sigma}\mathbf{A}]^2\|\psi(\mathbf{r})\|^2/n + 2(\hat{\text{df}}/n)\|\boldsymbol{\epsilon}\|^2/n - \|\boldsymbol{\epsilon}\|^2/n$$

