





$$D_{3}^{2} = D_{1}^{2} + D_{2}^{2}$$

$$\begin{array}{c} \text{initial variance} = \frac{\text{remaining variance}}{\text{variance}} + \frac{\text{lost variance}}{\text{variance}} \\ ||\mathbf{y_n}||^{2} = ||\mathbf{z_n}||^{2} + ||\mathbf{y_n} - \mathbf{z_n w^T}||^{2} \\ \text{maximize} \end{array}$$