

$$\begin{array}{l} \stackrel{?}{W} \\ Img = \\ \{I_1, I_2, \ldots, I_m\}mm \\ K_i \\ E_{K_i W} \\ Img \\ P = \\ P_W = \\ \{\mathbf{p}_{1W}, \ldots, \mathbf{p}_{sW}\}j \\ \mathbf{p}_{jW} = \\ (p_{jx}, p_{jy}, p_{jz}, 1) \end{array}$$

$$\begin{array}{l} \mathbf{p}_{jK_{t+1}} = E_{K_{t+1}W}\mathbf{p}_{jW} \\ (1) \qquad \stackrel{?}{R^3} \\ R^2 \end{array}$$

$$\begin{array}{l} f(x,y,z,1)=(u_0,v_0)+(x/z,y/z)f_u00f_v\frac{r'}{r} \\ (2) \end{array}$$

$$\begin{array}{l} (3) \qquad r=\sqrt{\frac{x^2+y^2}{z^2}} \end{array}$$

$$\begin{array}{l} r'=\frac{1}{\omega}arctan(2rtan\frac{\omega}{2}) \\ (4) \qquad f_u,f_v(u_0,v_0)\omega \\ T \end{array}$$

$$\begin{array}{l} E_{K_{t+1}W} = TE_{K_tW} = exp(\mu)E_{K_tW} \\ (5) \qquad \mu \\ T \\ (u,v)\mu,T \\ p(\hat{u},\hat{v}) \\ \stackrel{?}{(\hat{u},\hat{v})} \\ \sigma^l = \\ \stackrel{?}{P_{t+1}} \end{array}$$

$$\mu argmin \sum_{j \in P_{t+1}} \psi(\frac{\mathbf{e}_j}{\sigma_j}, \sigma_T)$$

$$\begin{array}{l} (6) \\ \mathbf{e}_j = (\hat{u}_j, \hat{v}_j) - f(exp(\mu)E_{K_tW}\mathbf{p}_j) \end{array}$$

$$\begin{array}{l} (7) \qquad \psi \\ \stackrel{?}{} \end{array}$$

$$\begin{array}{l} \psi(x,c)=\{ \, x \, (1-\frac{x^2}{c^2}) for |x| < c 0 for |x| > c \\ (8) \end{array}$$

$$\{\mu\},\{\mathbf{p}\} argmin = \sum_{i=1}^N \sum_{j \in P_i} \psi(\frac{\mathbf{e}_j}{\sigma_j}, \sigma_T)$$

$$\begin{array}{l} (9) \qquad \stackrel{?}{p}rocess \end{array}$$