$$X(\lambda\pi) = \lambda \begin{bmatrix} X_1 \\ Y_1 \\ Z_1 \\ T_1 \end{bmatrix} + (1-\lambda) \begin{bmatrix} X_2 \\ Y_2 \\ Z_2 \\ T_2 \end{bmatrix}$$

$$\alpha = \frac{-1}{a(X_1-X_2)+b(Y_1-Y_2)+c(Z_1-Z_2)+d(T_1-T_2)}$$

$$= \frac{-1}{a(X_1-X_2)+b(Y_1-Y_2)+c(Z_1-Z_2)+d(T_1-T_2)} \left[(aX_2+bY_2+cZ_2+dT_2) \begin{bmatrix} X_1 \\ Y_1 \\ Z_1 \\ T_1 \end{bmatrix} - (aX_1+bY_1+cZ_1+dT_1) \begin{bmatrix} X_2 \\ Y_2 \\ Z_2 \\ T_2 \end{bmatrix} \right]$$

$$= \alpha \begin{bmatrix} b(Y_2X_1 - Y_1X_2) + c(Z_2X_1 - Z_1X_2) + d(T_2X_1 - T_1X_2) \\ a(Y_1X_2 - X_1Y_2) + c(Y_1Z_2 - Y_2Z_1) + d(Y_1T_2 - Y_2T_1) \\ a(Z_2X_1 - Z_1X_2) + b(Z_1Y_2 - Z_2Y_1) + d(Z_1T_2 - Z_2T_1) \\ a(T_1X_2 - T_2X_1) + b(T_1Y_2 - T_2Y_1) + c(T_1Z_2 - T_2Z_1) \end{bmatrix} = \alpha X_L$$

$\therefore X_L$ is equal to $X(\lambda\pi)$ up to scale.