



Propagation of Twiss Parameters



CHESS & LEPP

$$(x_0, x'_0) \begin{pmatrix} \gamma_0 & \alpha_0 \\ \alpha_0 & \beta_0 \end{pmatrix} \begin{pmatrix} x_0 \\ x'_0 \end{pmatrix} = 2J$$

$$(x, x') \begin{pmatrix} \gamma & \alpha \\ \alpha & \beta \end{pmatrix} \begin{pmatrix} x \\ x' \end{pmatrix} = 2J = (x_0, x'_0) \underline{M}^T \begin{pmatrix} \gamma & \alpha \\ \alpha & \beta \end{pmatrix} \underline{M} \begin{pmatrix} x_0 \\ x'_0 \end{pmatrix}$$

$$\begin{pmatrix} \gamma & \alpha \\ \alpha & \beta \end{pmatrix} = \underline{M}^{-T} \begin{pmatrix} \gamma_0 & \alpha_0 \\ \alpha_0 & \beta_0 \end{pmatrix} \underline{M}^{-1}$$

$$\begin{pmatrix} \beta & -\alpha \\ -\alpha & \gamma \end{pmatrix} = \underline{M} \begin{pmatrix} \beta_0 & -\alpha_0 \\ -\alpha_0 & \gamma_0 \end{pmatrix} \underline{M}^T$$