

7.2 Tracking the Edwards-Teng Functions

For tracking the coupled lattice functions we assume that the transfer matrix for one element is partitioned as above:

$$R_e = \begin{pmatrix} A_e & B_e \\ C_e & D_e \end{pmatrix}, \quad (7.9)$$

The symplectic rotation at element entrance changes the diagonal blocks to

$$E_e = (A_e - B_e R_1) / \sqrt{|A_e - B_e R_1|}, \quad F_e = (D_e + \overline{R_1} C_e) / \sqrt{|A_e - B_e R_1|}, \quad (7.10)$$

and the new coupling matrix at exit becomes

$$R_2 = -(C_e - D_e R_1) \overline{(A_e - B_e R_1)} / |A_e - B_e R_1|. \quad (7.11)$$

We may track the decoupled lattice functions using the matrices E_e for mode 1 and F_e for mode 2.