

Diagram illustrating a matrix-vector multiplication and its decomposition into a sum of rank-1 matrices:

$$\mathbf{A} \mathbf{x} = u(1) \mathbf{b}_1 + \dots + u(g) \mathbf{b}_g$$

$\phi = 90^\circ$  plane  
 $\phi = 0^\circ$  plane

Diagram illustrating the decomposition of the electric field components  $E_g^*$  and  $E_\phi^*$  into a sum of terms  $t(1)\mathbf{c}'_1 + \dots + t(h)\mathbf{c}'_h$ , and a diagram showing the relationship between the electric field  $E$ , magnetic field  $H$ , and the sampling points  $\mathbf{x}$  via the matrix  $\mathbf{F}$ :

$$\begin{cases} E_g^* \\ E_\phi^* \end{cases} = \begin{cases} t(1)\mathbf{c}'_1 + \dots + t(h)\mathbf{c}'_h \\ t(1)\mathbf{c}'_1 + \dots + t(h)\mathbf{c}'_h \end{cases}$$

$$\begin{bmatrix} E \\ H \end{bmatrix} \text{ on the sampling points } = \mathbf{F} \mathbf{x}$$