Chapter 1

Fodor Paper

1.1 The Algorithm

1. calculate the effective interference for MMSE processing:

$$\zeta_{k,s} = \left\{ \left(d^{-}_{k,k} \chi_{k,k} H^{H}_{k,k} \left(\sum_{j} P_j d^{-}_{k,j} \chi_{k,j} H_{k,j} T_j T_j^{H} H^{H}_{k,j} + N_t \sigma_n^2 I \right)^{-1} H_{k,k} + \frac{1}{P_k} I \right)^{-1} \right\}^{(s,s)} \tag{1.1}$$

2. calculate the optimal loading matrix

$$(T_k)^{(s,s)} = \sqrt{\frac{\zeta_{k,s} N_t}{\sum_{j=1}^{N_t} \zeta_{k,j}}} \; \forall s \in [1, N_t] \tag{1.2}$$

3. calculate used Power

$$P_k = \frac{\zeta_{k,s}}{|(T_k)^{(s,s)}|^2} (\gamma_{tgt} + 1) \; \forall k \tag{1.3}$$

n. until no more change

1.2 closedform Solution

Fodor reuses a poroposition for a closed form solution from xy. p^* is calculated from ... with — lalala