

# Chapter 1

## Fodor Paper

### 1.1 The Algorithm

1. calculate the effective interference for MMSE processing:

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

2. calculate the optimal loading matrix

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

3. calculate used Power

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

- n. until no more change