

Notation	Definition
$\mathcal{L}$	set of links
$L$	total number of links
$h_{lk}$	channel gain from link $l$ 's transmitter to link $k$ 's receiver
$\mathbf{H}$	link gain matrix
$p_l$ (in vector $\mathbf{p}$ )	transmission power of link $l$
$n_l$ (in vector $\mathbf{n}$ )	noise power for link $l$
$\gamma_l$	SINR of link $l$
$\gamma_l(\cdot)$	SINR function of link $l$
$U_l(\cdot)$	utility function of link $l$
$x_l$ (in vector $\mathbf{x}$ )	ratio of link $l$ 's utility to the total network utility
$r_l$ (in vector $\mathbf{r}$ )	transmission rate of link $l$
$r_l(\cdot)$	transmission rate function of link $l$
$\alpha, \beta$	penalty multipliers