

# SYMBOLS

|                |   |
|----------------|---|
| $B$            | bandwidth                                     |
| $C$            | channel capacity                              |
| $c$            | light speed                                   |
| $E_0$          | average of fading channel                     |
| $f$            | frequency                                     |
| $f_m$          | maximum Dopler frequency                      |
| $f(x; \sigma)$ | probability density function                  |
| $H$            | channel matrix                                |
| $H_{mc}$       | self interference based on mutual coupling    |
| $H_{LI}$       | self interference signal matrix%              |
| $H_{NI}$       | mutual interference matrix                    |
| $h_I$          | real part sum of the complex oscillators      |
| $h_Q$          | imaginary part sum of the complex oscillators |
| $\lambda$      | wavelength                                    |
| $L$            | free space loss                               |
| $M_R$          | number of receiver                            |
| $N_T$          | number of transmitter                         |
| $n$            | noise AWGN                                    |
| $R$            | distance between transmitter and receiver     |
| $S$            | symbol matrix                                 |
| $y$            | received signal                               |
| $\omega_m$     | angular frequency for the m-th plane wave     |
| $\omega_d$     | angular frequency Doppler shifted             |
| $\phi_n$       | phase of the n-th Dopler shifted              |
| $\theta_m$     | angle of arrival for the m-th plane wave      |
| $\rho$         | average SNR                                   |
| $\sigma$       | magnitude of Jake's channel (scale parameter) |

*Dedicated to my family, my friends, my university, and my beloved  
country*