
Homework II

1. (40%) Consider that an MS with a velocity v receives an unmodulated carrier with a frequency f_c . The incidence angle $\theta(t)$ of the incoming wave is assumed to be uniformly distributed between $-\pi$ and π .
 - a) If $v = 20$ km/hr and $f_c = 2$ GHz, find the distribution function (cdf) and the probability density function (pdf) of the observed Doppler shift via simulation.
 - b) If $v = 90$ km/hr and $f_c = 26$ GHz, find the cdf and the pdf of the observed Doppler shift via simulation.
 - c) If $f_c = 2$ GHz and v is uniformly distributed between 20 km/hr and 90 km/hr, find the cdf and the pdf of the observed Doppler shift via simulation.
 - d) Derive the cdf and the pdf of the observed Doppler shift for fixed v and f_c . Compare the simulation results with the theoretical results.
- 助教: EECS Room 605, TWNTHUCOM5170@gmail.com
- Due Date: **10/14** (You shall submit your report and program to the class email account.)