pds_shu0omega.m

Fernando Pujaico Rivera

May 3, 2016

Abstract

The function pds_shu0omega() represent the formulation of $E = H(U_0|\Omega_M)$ in symmetric case of binary CEO problem.

1 Introduction

The function pds_shu0omega() in the m-file pds_shu0omega.m is defined as:

```
E = pds_shu0omega(Ps,M).
```

This function represent the formulation of $E = H(U_0|\Omega_M)$ in symmetric case of binary CEO problem, being $\Omega_M = U_1U_2 \ ... \ U_M$, $Pr(U_0) = 0.5$ and $P_s = Pr(U_i \neq U_0|U_0)$.

$$E = \sum_{k=0}^{M} \binom{M}{k} P_s^k (1-P_s)^{M-k} log_2 \left(1 + \frac{P_s}{(1-P_s)}^{M-2k}\right) \tag{1}$$

This equation can be seen in the thesis [1] in the page 49.

References

[1] Heshmati, Ashkan (2007) Data compression and transmission in Wireless Sensor Networks. Masters thesis, Concordia University. URL http://spectrum.library.concordia.ca/975271/