

hb_joint_sbceo.m

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Abstract

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

1 Introduction

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

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

This function represent the formulation of $E = H(\Omega_M)$ in symmetric case of binary CEO problem, being $\Omega_M = U_1 U_2 \dots U_M$, $Pr(U_0) = 0.5$ and $P_s = Pr(U_i \neq U_0 | U_0)$.

$$E = - \sum_{k=0}^M \binom{M}{k} Prob(k) \log_2(Prob(k)) \quad (1)$$

$$Prob(k) = 0.5(P_s^k (1 - P_s)^{M-k} + P_s^{M-k} (1 - P_s)^k) \quad (2)$$

This equation can be seen in [1].

References

- [1] Ferrari, G.; Martalo, M.; Abrardo, A.; Raheli, R., "Orthogonal multiple access and information fusion: How many observations are needed?," Information Theory and Applications Workshop (ITA), 2012 , vol., no., pp.311,320, 5-10 Feb. 2012. doi: 10.1109/ITA.2012.6181783