

# Perfect Secrecy in the Wild

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Abstract :

Alice wishes to reveal the state  $X$  to Bob, if he knows some other information  $Y$  also known to her. If Bob does not, she wishes to reveal nothing about  $X$  at all. When can Alice accomplish this? We provide a simple necessary and sufficient condition on the joint distribution of  $X$  and  $Y$ . Shannon's result on the perfect secrecy of the one-time pad follows as a special case.