

# INDEPENDENCE CHARACTERIZATION OF HYPERBOLIC SECANT DISTRIBUTION

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Let  $X_1, X_2, X_3, \epsilon$  be independent random variables such that  $X_1, X_2, X_3$  have the same hyperbolic secant distribution and  $\epsilon \sim \text{bin}(1, \frac{1}{2})$ . Then the random variables  $(X_1 + X_2)/2 + \epsilon X_3$  and  $(X_1 - X_2)/2 + (1 - \epsilon)X_3$  are independent. In 2019 L. Klabanov proved, using the method of intensively monotone operators that this property characterizes hyperbolic secant distribution under the assumption that  $X_1, X_2, X_3$  are iid and symmetric. In my talk I will discuss Klabanov's proof as well as non-symmetric and non-iid cases. The talk is based on a joint work with Jacek Wesółowski.