1.极化码中巴氏参数的简化算法

J. Xiong and L. Zhang, "Simplified Calculation of Bhattacharyya Parameters in Polar Codes," 2020 IEEE 14th International Conference on Anti-counterfeiting, Security, and Identification (ASID), Xiamen, 2020

对于BEC信道下的极化码，经典的码构造算法是通过计算信道的巴氏参数来衡量信道的有效性。本文通过揭示巴氏参数的内在规律—互补性，将计算巴氏参数过程中的乘法运算转换为加法运算，大大降低了极化子信道的巴氏参数的计算复杂度。此外，利用互补性，可以非常容易的得到互补信道下的巴氏参数值，完成子信道的挑选，简化巴氏参数的计算。

其他信息：

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标题：Simplified Calculation of Bhattacharyya Parameters in Polar Codes

摘要：The construction of polar code refers to selecting *K* "most reliable polarizing channels" in *N* polarizing channels $W\_{N}^{(i)}$ to transmit information bits. For non-systematic polar code, Arikan proposed a method to measure the channel reliability for BEC channel, which is called Bhattacharyya Parameter method. The calculated complexity of this method is $O(N)$. In this paper, we find the complementarity of Bhattacharyya Parameter. According to the complementarity, the code construction under a certain channel condition can be quickly deduced from the complementary channel condition.

关键词： ***Reliable channel; Bhattacharyya parameter; binary erasure channel***

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