

二值自相关的二元周期序列

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In this talk, we will give some results on binary periodic sequences with period n and 2-level autocorrelation values. For $n \equiv 1 \pmod{4}$, we prove some cases of Schmidt's Conjecture for perfect binary sequences (Des. Codes Cryptogr. 78 (2016), 237-267). For $n \equiv 2 \pmod{4}$, Jungnickel and Pott (Discrete Appl. Math. 95 (1999), 331-359) left the existence of four perfect binary sequences as an open question and we solve three of them. For $n \equiv 3 \pmod{4}$, we present some nonexistence of binary sequences whose nontrivial autocorrelation values are all equal to 3. For $n \equiv 0 \pmod{4}$, we give two binary sequences with $d = 4$ for $n = 8, 40$, and also show that there do not exist such binary sequences for all other values of n .