

A *conflict-avoiding code* (CAC) of length n and weight w is defined as a collection C of w -subsets (called codewords) of $\mathbb{Z}_n = \{0, 1, 2, \dots, n-1\}$, the ring of residues modulo n , such that $\Delta(x) \cap \Delta(y) = \emptyset$ for any $x, y \in C$, where $\Delta(x) = \{j-i \pmod{n} : i, j \in x, i \neq j\}$. The class of all the CACs of length n and weight w is denoted by $\text{CAC}(n, w)$. A code $C \in \text{CAC}(n, w)$ is called an *equi-difference* code if every codeword $x \in C$ has the form $\{0, i, 2i, \dots, (w-1)i\}$. The class of all the equi-difference CACs of length n and weight w is denoted by $\text{CAC}^e(n, w)$. A code $C \in \text{CAC}(n, w)$ is said to be *optimal* if C has the maximum number of codewords among the codes in $\text{CAC}(n, w)$. Furthermore, an optimal code $C \in \text{CAC}(n, w)$ is said to be *tight* if $\cup_{x \in C} \Delta(x) = \mathbb{Z} \setminus \{0\}$.

In this talk, we will give some other series of odd n for a tight code in $\text{CAC}^e(n, 3)$ by revisiting some properties of multiplicative order of an element modulo n and cyclotomic polynomial $\Phi_m(x)$, the minimal polynomial over \mathbb{R} having exactly the primitive m th roots of unity as its roots.