

**On Modular Gray Map**  
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**Abstract:**

In 19<sup>th</sup> century a French engineer Emile Baudot invented a cyclic-permuted binary code (now often called Gray code as it was patented by Frank Gray on 17.03.1953). This has represented a major advancement in telegraphy. After that it has witnessed various practical applications other than solving puzzles such as Tower of Hanoi and the Brain. Recently it is used as an isometry between  $Z_4$  and  $Z_2^2$  with respect to the Lee and Hamming distances to solve a 30 year old coding theory puzzle. This was called the Gray map. Since then many researchers have given various generalizations of such a map. In this paper we introduced a modular Gray map and we will explore some of its interesting properties.

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