

## Tailoring the Parameters of the Quantum MDS Codes Constructed from Constacyclic Codes

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**Abstract :** The existence conditions of dual containing constacyclic codes have opened a new path for finding quantum maximum distance separable (MDS) codes. Using these conditions parameters of length  $n=(q^2+1)/2$  quantum MDS codes were improved. A class of quantum MDS codes of length  $n=(q^2+q+1)/h$ , where  $h>1$  is an odd prime, have also been constructed having large minimum distance and these codes are new in the sense as these are not available in the literature.

**Keywords :** hermitian construction, constacyclic codes, cyclotomic cosets, quantum MDS codes, singleton bound

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