Abstract

Self-dual maximum distance separable codes (self-dual MDS codes) and self-dual near MDS (NMDS) codes are very important in coding theory and practice.   Thus, it is interesting to construct self-dual MDS or self-dual NMDS codes. In this paper, we not only give parity-check matrices of dual codes of twisted generalized Reed-Solomon codes (TGRS codes) but also present a sufficient and necessary condition of self-dual TGRS codes over F_q with q an odd prime. Moreover, we construct several classes of self-dual MDS or self-dual NMDS codes from TGRS codes.