



# Thesis Abstract

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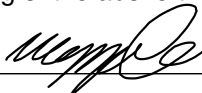


## Thesis Abstract

This thesis studies strongly incidence-transitive codes in Johnson graphs associated with the 2-transitive actions of  $\text{Sp}(2n, 2)$  of degrees  $2^{2n-1} \pm 2^{n-1}$ . We construct two new infinite families of strongly incidence-transitive codes and demonstrate that they are the only examples with codeword stabilisers contained in a geometric Aschbacher class. We construct two additional examples using the fully deleted permutation modules for the symmetric group  $S_m$  with  $m=10$  and show no further examples arise for other values of  $m$ . If a codeword stabiliser is almost-simple then we show in most cases that the corresponding code cannot be strongly incidence-transitive, though several possibilities remain open.

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## Declaration

We, the undersigned, agree and certify that the wording of the above thesis abstract is approved and final:

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