de Launey, Warwick; **Flannery, D. L.**; **Horadam, K. J.**
Cocyclic Hadamard matrices and difference sets. (English) Zbl 0956.05026
Discrete Appl. Math. 102, No. 1-2, 47-61 (2000).

The authors explain the connection between (relative) difference sets, cocyclic Hadamard matrices, cocycles, coboundaries and perfect binary arrays. In particular, they mention the interesting conjecture that for any t, cocyclic Hadamard matrices of order $4t$ exist. The authors show that many of the known families of Hadamard matrices are actually families of cocyclic Hadamard matrices.

Reviewer: Alexander Pott (Magdeburg)

MSC:

05B20	Combinatorial aspects of matrices (incidence, Hadamard, etc.)
05B10	Combinatorial aspects of difference sets (number-theoretic, group-theoretic, etc.)
20J06	Cohomology of groups
05B05	Combinatorial aspects of block designs

Keywords:

Hadamard matrix; difference set; perfect binary array; cocycle

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