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ABSOLUTELY FLAT IDEMPOTENTS*

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Abstract. A real n-by-n idempotent matrix A with all entries having the same absolute value is called *absolutely flat*. The possible ranks of such matrices are considered along with a characterization of the triples: size, constant, and rank for which such a matrix exists. Possible inequivalent examples of such matrices are also discussed.

Key words. Idempotent matrix, Absolutely flat, Projection.

AMS subject classifications. 15A21, 15A24, 05A15, 46B20.

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