962-05-635 **Joseph P Kung*** (kung@unt.edu), Department of Mathematics, University of North Texas, Denton, TX 76203-1430. *The Petersen block.* Preliminary report.

The Petersen block P is the cocycle matroid of the Petersen graph. It is a 15-point rank-6 binary simple matroid. It is the only known tangential block which "splits" into the union of two proper flats which is not a q-cone (or a q-lift). All other known splitting tangential blocks are q-cones of P. In this talk, we describe this splitting. The Petersen block is the union of two copoints or rank-5 flats. Both copoints are isomorphic to the cycle matroid $M(W_5)$ of the 5-wheel. They intersect at a rank-4 flat which is a 5-circuit. Thus, P can be obtained by taking the union of two $M(W_5)$'s and "suitably" identifying the points in the rim of the two wheels. This description of the Petersen block leads to the following conjecture, which forms a small part of the Tutte tangential 2-block conjecture: the Petersen block is the only splitting binary tangential 2-block with rank greater than 4 in which every point is on at least two 3-point lines. (Received September 18, 2000)