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William P. Miller* (millerwp@susqu.edu), 008 Seibert Hall, Susquehanna University,
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In 1984 Richard Stanley resolved the Vertex-Switching Reconstruction Problem for graphs with n vertices, where n is not divisible by four. We present a class of reconstruction problems that serves as a general analog of vertex-switching for representable geometries by switching on a collection of sets in the appropriate projective geometry that remains stable under automorphisms of that projective geometry. We establish conditions for geometries to be reconstructible from these kinds of switchings. The results yield a direct geometric analog to the Vertex-Switching Reconstruction Problem, namely, switching on cocircuits of the projective geometry. Results are also discussed for the cases of switching on the set of flats of a given rank, switching on the set of bases, and switching on the set of circuits of the projective geometry. (Received June 16, 2005)