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Yo'av Rieck* (yoav@uark.edu), 301 SCEN (MATH), University of Arkansas, 1 University Dr, Fayetteville, AR 72701, and **Yasushi Yamashita**. *Stable Rips Sela canonical representatives in geometric small cancelation groups.*

Rips and Sela constructed canonical representatives for torsion free hyperbolic groups. Their construction has been very useful and influential, in particular in Sela's solution for the isomorphism problem for torsion free hyperbolic groups (which gives, using Mostow, an algorithm to decide when closed hyperbolic n -manifolds are homeomorphic). They showed that in certain geometric small cancelation groups their construction can be improved to give *stable* canonical representatives, and asked if stable canonical representatives exist in all torsion free hyperbolic groups.

In this talk we will define stable canonical representative, explain their relation to the isomorphism problem, and show a new construction of stable canonical representatives that is valid in all geometric small cancelation groups. (Received August 25, 2016)