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Title:	Conjugacy Classes in Möbius groups
Authors:	Gongopadhyay, Krishnendu (/jspui/browse?type=author&value=Gongopadhyay%2C+Krishnendu)
Keywords:	Conjugacy classes Hyperbolic space Möbius groups Real elements
Issue Date:	2011
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Abstract:	Let $H^{n+1}$ denote the $n + 1$ -dimensional (real) hyperbolic space. Let $S_n$ denote the conformal boundary of the hyperbolic space. The group of conformal diffeomorphisms of $S_n$ is denoted by $M(n)$ . Let $Mo(n)$ be its identity component which consists of all orientation-preserving elements in $M(n)$ . The conjugacy classification of isometries in $Mo(n)$ depends on the conjugacy of $T$ and $T^{-1}$ in $Mo(n)$ . For an element $T$ in $M(n)$ , $T$ and $T^{-1}$ are conjugate in $M(n)$ , but they may not be conjugate in $Mo(n)$ . In the literature, $T$ is called real if $T$ is conjugate in $Mo(n)$ to $T^{-1}$ . In this paper we classify real elements in $Mo(n)$ . Let $T$ be an element in $Mo(n)$ . Corresponding to $T$ there is an associated element $To$ in $SO(n+1)$ . If the complex conjugate eigenvalues of $To$ are given by $\{e^{i\theta_j}, e^{-i\theta_j}\}$ , $0 < \theta_j \leq \pi$ , $j = 1, \dots, k$ , then $\{\theta_1, \dots, \theta_k\}$ are called the rotation angles of $T$ . If the rotation angles of $T$ are distinct from each-other, then $T$ is called a regular element. After classifying the real elements in $Mo(n)$ we have parametrized the conjugacy classes of regular elements in $Mo(n)$ . In the parametrization, when $T$ is not conjugate to $T^{-1}$ , we have enlarged the group and have considered the conjugacy class of $T$ in $M(n)$ . We prove that each such conjugacy class can be induced with a fibration structure
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