

cases	doc_1		doc_2		decision	id
	authors	<ul style="list-style-type: none"><li>Zhenqi Jenny Wang</li></ul>	authors	<ul style="list-style-type: none"><li>Zhenqi Jenny Wang</li></ul>	NOT DUPLICATES	1924
	title	Cohomological equation and cocycle rigidity of parabolic actions in $SL(n,\mathbb{R})$	title	Cohomological equation and cocycle rigidity of parabolic actions in $SL(n,)$		
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	urls	<ul style="list-style-type: none"><li>http://arxiv.org/pdf/1211.0777v3</li><li>http://arxiv.org/abs/1211.0777v3</li><li>http://arxiv.org/pdf/1211.0777v3</li></ul>	urls	<ul style="list-style-type: none"><li>https://archive.org/download/arxiv-1211.0777/1211.0777.pdf</li></ul>		
	id	id-7086241774523598521	id	id5926962623109909135		
	abstract	For any unitary representation $(\pi,\mathcal{H})$ of $G=SL(n,\mathbb{R})$ , $n\geq 3$ without non-trivial $G$ -invariant vectors, we study smooth solutions of the cohomological equation $\frac{u}{f}=g$ where $\frac{u}{f}$ is a vector in the root space of $\frac{sl}{(n,\mathbb{R})}$ and $g$ is a given vector in $\mathcal{H}$ . We characterize the obstructions to solving the cohomological equation, construct smooth solutions of the cohomological equation and obtain tame Sobolev estimates for $f$ . We also study common solutions to (the infinitesimal version of) the cocycle equation $\frac{u}{h}=\frac{v}{g}$ , where $\frac{u}{f}$ and $\frac{v}{g}$ are commutative vectors in different root spaces of $\frac{sl}{(n,\mathbb{R})}$ and $g$ and $h$ are given vectors in $\mathcal{H}$ . We give precisely the condition under which the cocycle equation has common solutions: $(*)$ if $\frac{u}{f}$ and $\frac{v}{g}$ embed in $\frac{sl}{(2,\mathbb{R})}\times \mathbb{R}$ , then the common solution exists. Otherwise, we show counter examples in each $SL(n,\mathbb{R})$ , $n\geq 3$ . As an application, we obtain smooth cocycle rigidity for higher rank parabolic actions over $SL(n,\mathbb{R})/\Gamma$ , $n\geq 4$ if the Lie algebra of the acting parabolic subgroup contains a pair $\frac{u}{f}$ and $\frac{v}{g}$ satisfying property $(*)$ and prove that the cocycle rigidity fails otherwise. Especially, the cocycle rigidity always fails for $SL(3,\mathbb{R})$ . The main new ingredient in the proof is making use of unitary duals of various subgroup in $SL(n,\mathbb{R})$ isomorphic to $SL(2,\mathbb{R})\ltimes \mathbb{R}^2$ or $(SL(2,\mathbb{R})\ltimes \mathbb{R}^2)\ltimes \mathbb{R}^3$ obtained by Mackey theory.	abstract	For any unitary representation $(\pi,H)$ of $G=SL(n,)$ , $n\geq 3$ without non-trivial $G$ -invariant vectors, we study smooth solutions of the cohomological equation $uf=g$ where $u$ is a vector in the root space of $sl(n,)$ and $g$ is a given vector in $H$ . We characterize the obstructions to solving the cohomological equation, construct smooth solutions of the cohomological equation and obtain tame Sobolev estimates for $f$ . We also study common solutions to (the infinitesimal version of) the cocycle equation $uh=vg$ , where $u$ and $v$ are commutative vectors in different root spaces of $sl(n,)$ and $g$ and $h$ are given vectors in $H$ . We give precisely the condition under which the cocycle equation has common solutions: $(*)$ if $u$ and $v$ embed in $sl(2,)\tilde{\longrightarrow}$ , then the common solution exists. Otherwise, we show counter examples in each $SL(n,)$ , $n\geq 3$ . As an application, we obtain smooth cocycle rigidity for higher rank parabolic actions over $SL(n,)/\tilde{\Gamma}$ , $n\geq 4$ if the Lie algebra of the acting parabolic subgroup contains a pair $u$ and $v$ satisfying property $(*)$ and prove that the cocycle rigidity fails otherwise. Especially, the cocycle rigidity always fails for $SL(3,)$ . The main new ingredient in the proof is making use of unitary duals of various subgroup in $SL(n,)$ isomorphic to $SL(2,)^2$ or $(SL(2,)^2)^3$ obtained by Mackey theory.		
	versions		versions			