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Transfer of Characters in the Theta Correspondence with One Compact Member

For an irreducible dual pair $(G, G') \subseteq \operatorname{Sp}(W)$ with one member compact and two representations $\Pi \leftrightarrow \Pi'$ appearing in the Howe duality, we give an expression of the character $\Theta_{\Pi'}$ of Π' via the character of Π . We compute the value of $\Theta_{\Pi'}$ on the maximal compact torus T' of G' for the dual pair $(G = U(n, \mathbb{C}), G' = U(p, q, \mathbb{C}))$, which are explicit in low dimensions. For $(G = U(1, \mathbb{C}), G' = U(1, 1, \mathbb{C}))$, we determine the value of the character on both Cartan subgroups of G'.

Keywords: Howe correspondence, characters, oscillator semigroup, reductive dual pairs.

MSC: 22E45, 22E46, 22E30.