A Semi-invariant Orbit of Complex Moduli Space Rational Self-dual Map

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Abstract Let $M :=$ 4-dimensional compact topology, for $\mathcal{B} \in M$ by $\mathcal{B} \stackrel{\text{def}}{=} \{(p,\, q,\, \ell) \mid p, q \in \ell\} \subset \mathbf{P}_2 \times \mathbf{P}_2 \times \mathbf{P}_2^{\times}$ with projection $\mathcal{B} \xrightarrow{\sigma} \mathbf{P} \times \mathbf{P}$ bijective outside the diagonal $\Delta := \{(p,\, p)\} \subset \mathbf{P}_2 \times \mathbf{P}_2$ such that every fiber $\sigma^{-1}(p,\, p) = \{(p,\, p,\, \ell) \mid \ell \ni p\}$, for $(p,\, p) \in \Delta$, is naturally identified by a line pencil through $p \in \mathbf{P}_2$ and an exceptional divisor, a 3-dimensional submanifold $E := \sigma^{-1}(\Delta) \subset \mathcal{B}$. First, we show: All non-trivial $\mathcal{B}$ projections $\mathbf{P}_2 \times \mathbf{P}_2 \times \mathbf{P}_2^{\times}$ given by degree-3 rational maps with cofactors $(\pi_1,\, \pi_2,\, \pi_3)$ are invariant of a generic eigen-line λ in each plane; we then prove: Homology classes of 3-dimensional $\mathcal{B}$ cocycles, in terms of the full preimages $\{A_1 = \pi_1^{-1}(\lambda),\, A_2 = \pi_2^{-1}(\lambda),\, M = \pi_3^{-1}(\lambda)\}$ are invariant of the choice of λ. Secondly, we prove: For any ϱ such that all (finite) orbits $\{\lambda(\Gamma_{\varrho\,\varphi}(\sigma))\}$ of semi-irreducible actions $\Gamma_\varrho(\Gamma_\varphi(\sigma))$ are given by automorphisms of (non)normal extension from 3 co-prime homogeneous polynomials, Γ of hyperplane pencils, and a topological triple $\{\alpha_1 = \#(\Gamma \cap A_1),\, \alpha_2 = \#(\Gamma \cap A_2),\, \mu = \#(\Gamma \cap M)\}$ which sends a Veronese curve to itself, the roots of semi-irreducible $D_\varphi(\mathbb{Q}[\cdots])$ polynomial actions are generated by coefficients of rational map φ with dual in $\mathbb{C}\mathbf{P}^k$. As corollary, we prove $\mathbb{R}$-valued $X \in \sup_\sigma \Gamma(\sigma)$ implies semi-irreducible $D_\varphi(\mathbb{Q}[\cdots])$ orbital closure $[(\lambda^X)]$ of characteristic $\mathcal{N}(0,1)$ moments $m_\alpha = \langle X^\alpha \rangle$, typically for $\varphi(t) = \left\langle e^{i(t,\, X(t))} \right\rangle = \int_{\mathbb{R}^n} e^{i(t,\, X(t))} d\mu\,(X(t))$ analytic in 0-neighborhood of the series $\log \varphi(t) = \sum_{|\alpha|>0} \frac{s_\alpha}{\alpha!}(it)^\alpha$, where $\varphi(t) = 1 + \sum_{|\alpha|>0} \frac{m_\alpha}{\alpha!}(it)^\alpha$, $|\alpha| = \alpha_1 + \cdots + \alpha_n,\ \alpha! = \alpha_1! \times \cdots \times \alpha_n!,\ \alpha_i \in \mathbb{N}$.

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INTRODUCTION