Imaginary Cycles of Permutations for Genus g=3 in Complex Geometries

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Abstract

Considering a semi–state configurations taking genus $g = 3$ for any complex geometries generalized over $(+1)$ and (-1) structures with the fibers $\mathcal{F}^{\times} \exists \times = \infty \, \forall \mathcal{F} \cong \bigoplus^{k}$ where $k = \coprod_{\ell=\infty}\left(g_1^{\mathcal{F}^{\times}}, g_2^{\mathcal{F}^{\times}}, g_3^{\mathcal{F}^{\times}}\right)^{\ell} / \sim$ defined through classes $[\mathcal{O}_O]$. Imaginary cycles being observed in *middle genus* for both left and right chirality over the vibrations of *unidirectional–cycles* enumerating over those fibers.

Key words: Complex structures; string theory.

Mathematical subject classification: 14–XX, 57–XX, 83Exx

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Methods

Analyzing the vibrations of a single string is difficult to account for in course of making this paper, thus a bundled strings considering as a *fiber* is depicted throughout this work. Configurations set up is of three geometric curvatures, viz. Euclidean for $\Omega = 0$, elliptic for $\Omega = +1$, hyperbolic for $\Omega = -1$. A state being considered for $\Omega = +1, -1$ topologies as is common in every hypercomplex and hyperbolic complex structures which in due proceedings in this paper – where a genus $g = 3$ being incorporated in Ring $\oplus^k$ being configured through fibers $\mathcal{F}^\times$ as,

$$\mathcal{F}^\times \ni \times = \infty, \forall \mathcal{F} \cong \oplus^k \; where \; k = \coprod_{\ell=\infty} \left(g_1^{\mathcal{F}^\times}, g_2^{\mathcal{F}^\times}, g_3^{\mathcal{F}^\times}\right)^\ell / \sim$$

Here ℓ is being taken over towards infinity with each k being closed through equivalence after the disjoint union occurring through the each states being analyzed here. Considering the topologies as σ_{C-Y} being generalized over $\Omega = +1, -1$ a circuit and a reverse circuit is established via Σ_0 passing from d_1 to d_2 and reverse as,

$$\Sigma_{0_{\cong+1}} \xrightarrow{d_1} \Sigma_{0_{\cong 0}} \xrightarrow{d_2} \cong \Sigma_{0_{\cong-1}} \; \forall +1 \longrightarrow -1$$

$$\Sigma_{0_{\cong-1}} \xleftarrow{d_2} \Sigma_{0_{\cong 0}} \xleftarrow{d_1} \cong \Sigma_{0_{\cong+1}} \; \forall -1 \longrightarrow +1$$

The groups are set up that being eventually help in establishing the cyclic permutations through the aforesaid genus as,

Ψ^{-1}	$\overline{\Psi^{+1}\Psi^{-1}}$	Ψ^{+1}
$\Sigma_{0_{\cong-1}}$ $\Omega = -1$	$\Sigma_{0_{\cong 0}}$ σ_{C-Y}	$\Sigma_{0_{\cong+1}}$ $\Omega = +1$

The chirality over those structures considering those vibrations could be analyzed taking the fibers passing through the $g = 3$ genus configurations as,

$$Left - Starting \qquad Middle - Starting \qquad Right - Starting$$

$$\underset{Permutation\ cycles}{\partial} \qquad \underset{Defective\ Permutation\ cycles}{\partial\,\bar{\partial} - \partial\,\bar{\partial}^{-1}} \qquad \underset{Permutation\ cycles}{\bar{\partial}}$$

Denoting each element as matrix over permutation cycles as,

$$\partial = \begin{pmatrix} 1 & 2 & 3 & \cdots & n \\ 2 & 3 & 1 & \cdots & n \end{pmatrix}_{\forall g=3\ iterations}$$

$$\bar{\partial} = \begin{pmatrix} 3 & 2 & 1 & \cdots & n \\ 2 & 1 & 3 & \cdots & n \end{pmatrix}_{\forall g=3\ iterations}$$

$$\partial\,\bar{\partial} = \begin{pmatrix} 2 & 1 & \cdots & n \\ 1 & 2 & \cdots & n \end{pmatrix}_{\forall g=3\ iterations}$$

$$\partial\,\bar{\partial}^{-1} = \begin{pmatrix} 2 & 3 & \cdots & n \\ 3 & 2 & \cdots & n \end{pmatrix}_{\forall g=3\ iterations}$$

Thus, the imaginary cycles of permutations could be established via,

$$\partial\,\bar{\partial} - \partial\,\bar{\partial}^{-1} \equiv \left[\begin{pmatrix} 2 & 1 & \cdots & n \\ 1 & 2 & \cdots & n \end{pmatrix} \bigcap \begin{pmatrix} 2 & 3 & \cdots & n \\ 3 & 2 & \cdots & n \end{pmatrix}\right]_{\forall g=3\ iterations}$$

Considering the 2nd genus being incapable to go over a complete cycles, the best that could be said is their permutation is indeed imaginary.

Generalizing this permutation cycles for all $g = 3$ on all geometries normed through the fibers taking up the Rings for complex structures incorporated through,

$$\oplus^k \longrightarrow \begin{pmatrix} \partial \\ \bar{\partial} \\ \partial\,\bar{\partial} - \partial\,\bar{\partial}^{-1} \end{pmatrix}_{\forall g=3\ iterations} \quad over\ all \left[\begin{array}{c|c} \Psi^{-1} & \Sigma_{0_{\cong -1}} \\ \hline \Psi^{+1}\Psi^{-1} & \Sigma_{0_{\cong 0}} \\ \Psi^{+1} & \Sigma_{0_{\cong +1}} \end{array}\right]$$

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