Characteristic Zero Complex in Event of a Partitioning (4,4,3)

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Abstract—A project’s aim is to investigate use the complex of characteristic ‘0’ in the event of a partitioning (4, 4, 3) using the idea of mapping Cone and the concepts divided power the place polarization, illustrations, and Capelli (1) in this partitioning.

Keywords—Mapping Cone, Divided Power Algebra, Place Polarization, Resolution of Weyl Module.

I. INTRODUCTION

Let R be abelian, f be a free R-module, D[0] be the divided power degree b. Think about layouts

\[ \hat{\delta}^{(x)}_{21}: D_{p+k} \otimes D_{q-k} \otimes D_{r} \to D_{p} \otimes D_{q} \otimes D_{r} \]

The layouts is a place polarization from \( D_{p+k} \) to \( D_{q-k} \) and

\[ \hat{\delta}^{(x)}_{32}: D_{p} \otimes D_{q+k} \otimes D_{r-k} \to D_{p} \otimes D_{q} \otimes D_{r} \]

The layouts is a place polarization from \( D_{q+k} \)

The characteristic zero complex in the event of a partitioning (2, 2, 2) were also conducted a survey either by reviewers through [1], [2], [3], [5], [6] and [7]. Feature the characteristic ‘0’ complex as shown in illustration event of some partitioning in [8]. [9] features the concepts and the precision of either the Weyl resolution in the case of partition (8,7) and (8,3).

We discuss during this case paper the characteristic ‘0’ resolution in the event of a partitioning (4, 4, 3) utilizing the concept mapping con last but not least part, after we have shown the phrases of the characteristic ‘0’ complex in the following portion of the same division. The layouts \( \hat{\delta}^{(x)}_{b_i} \) that is to say the divided power the polarization \( \hat{\delta}^{(x)}_{b_i} \) is really lower \( b \) capelli (ONE) [10].

II. CONDITIONS CHARACTERISTIC ZERO COMPLEX IN EVENT A PARTITIONING (4,4,3)

The stances of the conditions of the complex are dictate by the duration of the permutation they match to [11]. In the event of a partitioning (4, 4, 3) we control the pursuit matrix;

\[
\begin{pmatrix}
D_4 & D_3 & D_1 \\
D_5 & D_4 & D_2 \\
D_6 & D_5 & D_3
\end{pmatrix}
\]

Then the characteristic zero complex having the following correspondences between its The Conditions;

\[
\begin{align*}
D_3 \otimes D_4 \otimes D_3 & \leftrightarrow (\text{id}) \\
D_3 \otimes D_4 \otimes D_2 & \leftrightarrow (23) \\
D_3 \otimes D_3 \otimes D_3 & \leftrightarrow (12) \\
D_3 \otimes D_2 \otimes D_1 & \leftrightarrow (123) \\
D_2 \otimes D_3 \otimes D_1 & \leftrightarrow (132) \\
D_1 \otimes D_2 \otimes D_2 & \leftrightarrow (13) \\
\end{align*}
\]

Consequently the characteristic zero resolution in the event of a partitioning (4, 4, 3) possesses the expression;

\[
\begin{align*}
D_6 \otimes D_5 \otimes D_5 & \leftrightarrow (id) \\
D_5 \otimes D_4 \otimes D_3 & \leftrightarrow (23) \\
D_5 \otimes D_4 \otimes D_2 & \leftrightarrow (12) \\
D_5 \otimes D_3 \otimes D_3 & \leftrightarrow (123) \\
D_5 \otimes D_3 \otimes D_2 & \leftrightarrow (132) \\
D_5 \otimes D_2 \otimes D_2 & \leftrightarrow (13) \\
\end{align*}
\]

III. THE SCHEMATIC FOR THE CHARACTERISTIC ZERO COMPLEX IN THE EVENT OF A PARTITIONING (4, 4, 3)

Look at the approach illustration;
By utilizing Capelli (1)

\[ ṙ_{2} \cup D_{6} \otimes D_{1} \rightarrow D_{3} \otimes D_{1} \]

We get acquainted

\[ \varphi_{1} : D_{6} \otimes D_{1} \rightarrow D_{5} \otimes D_{1} \]

And

\[ \varphi_{2} : D_{5} \otimes D_{1} \rightarrow D_{4} \otimes D_{1} \]

Now, we have the authority to familiarize the layout

Which of the following constructs the layout $V$ commutative

\[ w_{1} : D_{6} \otimes D_{2} \rightarrow D_{5} \otimes D_{2} \]

Using the following schematic layout:

We need to get to know $UU$ in order to create the $S$ commute layout.

\[ o_{2} : D_{5} \otimes D_{1} \rightarrow D_{4} \otimes D_{2} \]

By utilizing Capelli (1)

\[ \dot{\vartheta}(2) = \frac{1}{2} \dot{\vartheta}(2)_1 + \dot{\vartheta}(2)_3 \]

\[ \Rightarrow o_{2} = \frac{1}{2} \dot{\vartheta}(2) \]

Think about the following schematic layout:

Familiarize

\[ Y : D_{6} \otimes D_{2} \rightarrow D_{4} \otimes D_{2} \]

\[ Y(\varphi) = \dot{\vartheta}(2) ; \text{ where } \varphi \in D_{6} \otimes D_{2} \]

**Proposition (3.1):**

The schematic $I$ in figure (2) is commute.

**Proof:**

To illustrate the schematic $I$ is commute, We must illustrate

\[ o_{2} \circ \varphi_{1} = Y(\varphi) \]
\( \varphi_2 \varphi_1 = \left[ \frac{1}{2} \delta_{32} \delta_{21} - \delta_{31} \right] \delta_{21} \\
= \delta_{32} \delta_{21} - \delta_{31} \delta_{21} \\
= \delta_{21} \delta_{32} \\
= \gamma_0 \tau_1 \)

**Proposition (3.2):**

The schematic \( J \) in figure (2) is commute.

**Proof:**

To illustrate the schematic \( J \) is commute, we must illustrate

\[
\psi_0, \psi_1 \rightarrow \gamma_0, \tau_1
\]

Ultimately, we familiarize ourselves with the layouts \( \sigma_1, \sigma_2 \) and \( \sigma_3 \):

\[
\sigma_3 (\hat{x}) = (\sigma_1 (\hat{x}), \tau_1 (\hat{x})) ; \forall \hat{x} \in D_6 \otimes D_4 \otimes D_1 \\
(\sigma_2 (\hat{x}_1, \hat{x}_2) = (\sigma_2 (\hat{x}_1) - Y (\hat{x}_2), \psi_1 (\hat{x}_2) - \tau_2 (\hat{x}_2)) ; \forall \hat{x} \in D_6 \otimes D_3 \otimes D_2 \oplus D_5 \otimes D_5 \otimes D_1 \\
(\sigma_1 (\hat{x}_1, \hat{x}_2) = (\tau_3 (\hat{x}_1) + \psi_2 (\hat{x}_2)) ; \forall \hat{x} \in D_4 \otimes D_3 \otimes D_2 \oplus D_5 \otimes D_3 \otimes D_3 \\
\]

Where

\[
\sigma_2 : D_6 \otimes D_4 \otimes D_1 \\
\sigma_3 : D_6 \otimes D_3 \otimes D_2 \\
\sigma_1 : D_4 \otimes D_3 \otimes D_3
\]

Is complex.

**Proof:**

It is well recognized among the familiar that \( \delta_{21} \) and \( \delta_{32} \) are injective [12], yet we have \( \sigma_3 \) injective utilizing ‘Capelli (1)’. Now

\[
(\sigma_3 \sigma_2) (\hat{x}) = \sigma_2 (\sigma_1 (\hat{x}), \tau_1 (\hat{x})) \\
= \sigma_2 (\delta_{21} (\hat{x}), \delta_{32} (\hat{x})) \\
= (\sigma_2 (\delta_{21} (\hat{x}) = Y (\delta_{32} (\hat{x})) \psi_1 (\delta_{32} (\hat{x}) - \tau_2 (\delta_{21} (\hat{x}))) \\
= \left( \psi_2 (\delta_{21} (\hat{x}) - Y (\delta_{32} (\hat{x}), \psi_1 (\delta_{32} (\hat{x}) - \tau_2 (\delta_{21} (\hat{x}))) \right)
\]

\[
(\sigma_2 (\delta_{21} (\hat{x}) - Y (\delta_{32} (\hat{x}) \\
= \left[ \frac{1}{2} \delta_{32} \delta_{21} - \delta_{31} \right] \delta_{21} (\hat{x}) - \delta_{21} (\hat{x}) = \left[ \delta_{32} (\hat{x}) \right] \delta_{21} (\hat{x}) \\
= \left[ \delta_{21} \delta_{32} + \delta_{21} \delta_{31} - \delta_{21} \delta_{31} - \delta_{21} \delta_{32} \right] \psi_1 (\hat{x}) \\
= 0 \\
\psi_1 (\delta_{32} (\hat{x}) - \tau_2 (\delta_{21} (\hat{x})) \\
= \left[ \frac{1}{2} \delta_{21} \delta_{32} + \delta_{32} \delta_{21} - \delta_{21} \delta_{32} \right] \psi_1 (\hat{x}) \\
= \left[ \delta_{32} \delta_{21} - \delta_{32} \delta_{32} - \delta_{32} \delta_{21} \right] \psi_1 (\hat{x}) \\
= 0
\]

\[
(\sigma_2 \sigma_3) (\hat{x}) = 0
\]

And
\[
\begin{align*}
(\sigma_{10}, \sigma_2)(\dot{x}_1, \dot{x}_2) &= \sigma_t(\omega_2(\dot{x}_1) - \gamma(\dot{x}_2), \omega_1(\dot{x}_2) - \gamma_2(\dot{x}_1)) \\
&= \sigma_t([\frac{1}{2} \partial_{320}\partial_{21} - \partial_{31}]^2(\dot{x}_1) - \partial_{21}^2(\dot{x}_2), [\frac{1}{2} \partial_{320}\partial_{21} + \\
&\quad \partial_{31}]^2(\dot{x}_2) - \partial_{32}^2(\dot{x}_1)) \\
&= \partial_{320}([\frac{1}{2} \partial_{320}\partial_{21} - \partial_{31}]^2(\dot{x}_1) - \partial_{21}^2(\dot{x}_2) + \\
&\quad \partial_{210}([\frac{1}{2} \partial_{320}\partial_{21} + \\
&\quad \partial_{31}]^2(\dot{x}_2) - \partial_{32}^2(\dot{x}_1)) \\
&= ([\partial_{32}^2 \partial_{21} - \partial_{320}\partial_{31}]^2(\dot{x}_1) - \partial_{320}\partial_{21}^2(\dot{x}_2) + [\partial_{21}^2 \partial_{32} + \\
&\quad \partial_{210}\partial_{32}]^2(\dot{x}_2) - \partial_{32}^2(\dot{x}_1)) \\
&= ([\partial_{210}\partial_{32}^2 + \partial_{320}\partial_{31} - \partial_{320}\partial_{31} - \partial_{210}\partial_{32}^2](\dot{x}_1) + \\
&\quad [\partial_{320}\partial_{21}^2 - \partial_{210}\partial_{31} + \partial_{210}\partial_{31} - \partial_{320}\partial_{21}^2](\dot{x}_2)) \\
&= 0 \\
\Rightarrow (\sigma_{10}, \sigma_2)(\dot{x}_1, \dot{x}_2) &= 0
\end{align*}
\]

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