上智大学数学談話会のお知らせ

日時：2023年1月6日（金）17:30 – 18:30

場所：上智大学四谷キャンパス4号館3階4-398室
（Zoom によるオンライン配信あり）

講演者：Suchada Pongprasert 氏
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講演題目：$D_5^{(1)}$ and $D_6^{(1)}$-Geometric Crystals and their ultra-discretizations

講演要旨：Let $\mathfrak{g}$ be an affine Lie algebra with index set $I = \{0, 1, 2, \cdots, n\}$ and $\mathfrak{g}^L$ be its Langlands dual. It is conjectured that for each Dynkin node $i \in I \setminus \{0\}$ the affine Lie algebra $\mathfrak{g}$ has a positive geometric crystal whose ultra-discretization is isomorphic to the limit of certain coherent family of perfect crystals for $\mathfrak{g}^L$. In this talk, I will explain how we construct a positive geometric crystal for the affine Lie algebra $D_5^{(1)}$ corresponding to the Dynkin spin node $k = 5$ and a positive geometric crystal for the affine Lie algebra $D_6^{(1)}$ corresponding to the Dynkin spin node $k = 6$. Then I will explain how we define explicit 0-action on the level ℓ known perfect crystals and show that $\{B^{k,l}\}_{l\geq 1}$ is a coherent family of perfect crystals with limit $B^{k,\infty}$, $k = 5, 6$. I will also talk about how we show that for $k = 5, 6$, the ultra-discretization of $\mathcal{V}(D_k^{(1)})$ is isomorphic to $B^{k,\infty}$ as crystals which prove the conjecture in these cases.

上智大学数学談話会ウェブサイト：
https://dept.sophia.ac.jp/g/st/math/colloquium/
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