THE UNIVERSITY   OF HONG KONG

Institute of Mathematical Research
Department of Mathematics

Geometry Seminar

Poisson geometry of non-simple Kashiwara operators

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Abstract

The main goal of this talk is to define Kashiwara operators associated to non-simple roots and study their Poisson geometry. These non-simple Kashiwara operators allow us to define a version of Kashiwara's quantum boson algebra, thus answering a question of Ginzburg-Graham. We analyze the PBW, Levendorskii-Soibelman and Leibniz type properties of this version of the quantum boson algebra. The quasi-classical limit of the positive half of our version of the quantum boson algebra turns out to be a polynomial Poisson algebra. We study this Poisson algebra in detail. For example, we write down explicitly a formula for the Poisson bracket in types A and G_2. We prove that, for example, this Poisson algebra has the structure of a Poisson CGL extension in the sense of Goodearl and Yakimov. We also try to relate this Poisson algebra to the coordinate ring of the big cell in the flag variety equipped with the standard Poisson bracket.

Date:	**August 23, 2018 (Thursday)**
Time:	**3:00 – 4:00pm**
Venue:	**Room 210, Run Run Shaw Bldg., HKU**

All are welcome