

Department of Mathematics, BGU

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# Algebraic Geometry and Number Theory

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*On Wednesday, January ,11 2017*

*At 15:10 – 16:30*

*In Math 101-*

Victor Vinnikov (BGU)

will talk about

**The universal skew field of fractions for a tensor  
product of free algebras**

Abstract:



**Ben Gurion University - Mathematics**  
**Algebraic Geometry and Number Theory Seminar**

*Speaker*    **Victor Vinnikov (BGU)**

*Title*        **The universal skew field of fractions for a tensor product of free algebras**

*Date*        Wednesday, 11 January 2017

*Time*        15:10 - 16:30 (starts 15:10 sharp)

*Location*   Room -101 in Building 58

*Abstract*    Noncommutative localization is a tricky business: a noncommutative integral domain cannot always be embedded into a skew field of fractions, and when it can, the embedding can be highly non-unique. The correct notion of the universal skew field of fractions was identified by Amitsur in his groundbreaking work on rational identities where he constructed what is called now the free skew field, namely the universal skew field of fractions of a free algebra; it was shown later by P.M. Cohn in his extensive studies that any fir (free ideal ring) admits a universal skew field of fractions. However a tensor product of free algebras is not a fir. I will describe a construction of the universal skew field of fractions thereof which is based on "tensor" matrix evaluations and is motivated by recent progress in free noncommutative analysis. This is a joint work with Igor Klep and Jurij Volcic.

(updated 19 Dec 2016)