



## Department of Theoretical Physics



### Indian Lectures on Noncommutative Geometry

Within

#### Workshop on Noncommutative Geometry

JUNE 25 - JULY 13 2007

Bratislava, Slovakia

- **T.R. Govindarajan, 2.7. 2007**  
*Introduction to conventional NC field theories: Lorentz symmetry breakdown; IR/UV mixing; Stripes phase; Noncommutative solitons; Nonunitary time evolution; Fuzzy sphere and other Fuzzy spaces.*
- **S. Vaidya, 2.7. 2007**  
*Twisted Poincare symmetry and quantisation.*
- **T.R. Govindarajan, 3.7. 2007**  
*Quantum Mechanics with time-space noncommutativity; unitary time evolution and discretisation of time.*
- **K.S. Gupta, 3.7. 2007**  
*Aspects of noncommutative gravity – 1*
- **S. Vaidya, 3.7.2007**  
*Implications : Twisted Statistics; removal of IR/UV mixing; applications of new statistics.*
- **K.S. Gupta, 4.7.2007**  
*Aspects of noncommutative gravity – 2*
- **S. Vaidya, 4.7.2007**  
*QED and Gauge theories with twisted symmetries; Spontaneous symmetry breakdown; Diffeos and gravity; Standard model.*
- **H. Grosse, 6.7.2007**  
*Wedge-Local Quantum Fields and Noncommutative Minkowski Space 1.*
- **G. Lechner, 6.7.2007**  
*Wedge-Local Quantum Fields and Noncommutative Minkowski Space 2.*
- **D. O'Connor, 6.7.2007**  
*Random tilings, melting of crystals and two dimensional fermions.*

The lectures will take place at the Faculty of Mathematics, Physics and Informatics, room F2-125.

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