School of Mathematics & Statistics
hOdrabaad ivaSvaivaValaya
University of Hyderabad

ONE-DAY WORKSHOP ON *ALGEBRAIC NUMBER THEORY*

Schedule of Talks

(<u>Venue</u>: Seminar Hall-II, School of Mathematics & Statistics)

Time	Name of the Speaker	Title of the Talk
9.30am-10.30am	**Prof. A. Sankaranarayanan** TIFR, Mumbai	Riemann Hypothesis and its current status
Coffee/Tea Break		
10.50am -11.50am	**Prof. C.S. Rajan** TIFR, Mumbai	On solvable base change for GL(n)
Break		
12.00noon- 1.00pm	**Dr. P. Anuradha Kameswari** Department of Mathematics Andhra University	An analogue to Euler totient and a count in $Z_p[X]$
L u n c h		
14.30-15.30	**Dr. U.K. Anandavardhanan** IIT-Bombay, Mumbai	Distinguished Representations
High Tea		

Abstracts

Riemann Hypothesis and its current status by Prof. A. Sankaranarayanan [9.30am -10.30am]

Riemann Hypothesis asserts that all the non-trivial zeros lie on the critical line $\Re s = \frac{1}{2}$. We will discuss about this aspect and its current status.

On solvable base change for GL(n) by Prof. C.S. Rajan [10.50am - 11.50am]

The conjectures of Langlands provide a vast generalization of the classical quadratic reciprocity law. Among other things, it asserts that certain representations of the group of adeles associated to GL(n) over a number field F are parametrized by n-dimensional complex represenations of the Langlands group, itself a conjectural generalization of the Galois grop.

Base change amounts to restriction of the parameters to a finite extension E of F. Following the work of Saito and Shintani, the properties of base change for cyclic extensions of prime degree were established by Langlands for GL(2) and by Arthur and Clozel for GL(n) for arbitrary n. In turn these results turned out to fundamental to applications to proving further reciprocity laws, for instance the work of Wiles and Taylor.

We will discuss the properties of base change map for arbitrary finite solvable extensions of number fields.

An analogue to Euler totient and a count in Z_p[X] by Dr. P. Anuradha Kameswari [12.00noon – 1.00pm]

Analogue φ_p to euler totient in $Z_p[x]$ is introduced and if $f(x) \in Z_p[x]$ is an irreducible polynomial, the number of polynomials g(x) with
$\deg(g(x)) \leq \deg(f(x)) \ni (g(x), f(x)) = 1$ is counted using the function φ_p in $Z_p[x]$.

Distinguished Representations by Dr. U.K. Anandavardhanan [2.30pm - 3.30pm]

In this talk we will introduce the notion of a distinguished representation and survey some of the recent results concerning these representations.