**Columbia Mathematics Department Colloquium**

*" The second adjointness and the Plancherel measure"*

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Abstract: Let $F$ be a p-adic field, $G = Sl_2(F), B = TU$ the Borel subgroup $C = \{x \in M_2(F) - 0 | det(x) = 0\}$. We have maps $\|\| : G, C \to \mathbb{R}$ which associate to a matrix the maximum of norms of matrix coefficients. For any $n \in \mathbb{R}$ we denote by $G_n, C_n$ subsets of matrices with norm bigger then $n$. Let $K \subset G$ be an open compact subgroup. Then for $n > n(K)$ there exists a bijection between $K \times K$-orbits in $G_n$ and $K \times K$-orbits in $C_n$ which maps a $K \times K$-orbit in $G$ to the "nearby" $K \times K$-orbit in $C$. Such a bijection defines an isomorphism $\phi$ between the space of $K \times K$-invariant functions on $C_n$ and the space of $K \times K$-invariant functions on $G_n$. Bernstein proved the existence of the unique $G \times G$-equivariant linear map $B : \mathbb{C}_c^\infty(C) \to \mathbb{C}_c^\infty(G)$ whose restriction on $K \times K$-invariant functions on $C_n$ is equal to $\phi$.

I'll explain how to write an "explicit" formula for $B$ and how to derive from this formula the expression for the Plancherel measure on the principle series of representations of $G$. The same construction works for an arbitrary reductive $F$-group $G$.

**March 4, Wednesday, 5:00-6:00 pm**
**Mathematics 312**

Tea will be served at 4:30pm