NONCOMMUTATIVE GEOMETRY AND MODULAR FORMS

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Modular forms appeared naturally in noncommutative geometry in 4 different ways in the last two years. We shall give an update on these occurences. One of them is joint work with Henri Moscovici and relates the transverse geometry of foliations with the cross product of the algebra of modular foms by Hecke operators. We shall explain the relation with more recent work (with Matilde Marcolli) on the quantum statistical mechanical system with phase transition describing the space of Q-lattices in C up to commensurability and its relation with spontaneous symmetry breaking and the modular field.