Sur la cohomologie et le spectre des variétés localement symétriques

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Abstract. This volume is intended as an expository account of some results and problems concerning the cohomology of locally symmetric spaces (especially arithmetic ones) and the relationship with the spectral theory of automorphic forms. The discussion is divided into four chapters:

– A general introduction to arithmetic manifolds, Matsushima's formula and cohomological representations;
– Cohomology of hyperbolic manifolds;
– Isolation properties in the automorphic spectrum;
– Cohomology of arithmetic manifolds.

However this presentation will be very unbalanced: it is a slightly revised version of my habilitation thesis. It is nevertheless my hope that the reader will not be too much disappointed by the incompleteness of this acount and hopefully find it useful.