In the study of the spectrum of the Dirac operator, it is natural and useful to consider examples, and the archetypal examples in Riemannian Geometry are the *symmetric spaces*. For a symmetric space, the spectrum of the Dirac operator can be (theoretically) computed by classical harmonic analysis methods.

The aim of this part is to present a method for the determination of the spectrum of the Dirac operator on a spin, compact, simply connected and irreducible symmetric space, and to give the explicit computation of the spectrum in those three cases:

(1) spheres $(\mathbb{S}^n, \mathrm{can})$, $n \geq 2$;

(2) complex projective spaces $(\mathbb{C}\mathrm{P}^m, \mathrm{can})$, $m = 2q + 1$, $q \geq 0$;

(3) quaternionic projective spaces $(\mathbb{H}\mathrm{P}^m, \mathrm{can})$, $m \geq 1$.

Note that the holonomy of those manifolds is, respectively, SO_n, U_{2q+1} and $\mathrm{Sp}_1 \,.\, \mathrm{Sp}_m$, so they are standard examples of, respectively, Riemannian, Kähler and quaternion-Kähler manifolds.