

What CP_2 is?

CP_2

1. can be regarded as
 - (a) complex projective space of 2- complex dimensions (4 real dimensions) obtained by identifying the points of 3-complex- dimensional space C^3 differing by a complex scaling that is as the space of complex lines in C^3 .
 - (b) coset space $SU(3)/SU(2)$: symmetric space with Kaehler structure meaning the existence of Kaehler form defining covariantly constant self- dual Maxwell field, and that CP_2 has $SU(3)$ as maximal group of isometries and identified as color group acting as symmetries of strong interactions at parton level
2. has $SU(2)_L \times U(1)$ as holonomy group coding electro-weak interactions and ew symmetry breaking in the structure of the spinor connection
3. has a non-trivial topology in the sense that second homology group is non-trivial meaning that CP_2 Kaehler form defines self-dual magnetic monopole with Kaehler electric charge identical to Kahler magnetic charge fixing together with weak form of electric- magnetic duality the structure of elementary particles to high degree. This predicts the presence of magnetic fields consisting of monopole fluxes possible without the presence of currents needed to create ordinary magnetic fields explaining the presence of magnetic fields in early and recent Universe and suggests that super conductors and even ordinary ferromagnets could carry magnetic flux as monopole fluxes