Renormalization group fixed points and chiral restoration scenarios from generalized hidden local symmetry approach YOSHIMASA HIDAKA, OSAMU MORIMATSU, Institute of Particle and Nuclear Studies, High Energy Accelerator Research Organization, MUNEHISA OHTANI, Radiation Laboratory, RIKEN — There are some proposals for realization patterns of chiral symmetry. In the standard scenario of chiral symmetry, the chiral partner of the pion is the sigma meson. Another scenario, Vector Manifestation (VM), has been recently proposed, in which the chiral partner of the pion is the rho meson. We study these chiral restoration patterns from renormalization group approach in the generalized hidden local symmetry(GHLS) model, which includes vector and axial-vector mesons in addition to pions as physical degrees of freedom. We found two types of fixed points corresponding to the standard and VM scenarios. The decay-constant ratio of rho meson to A_1 becomes unit $(F_\rho/F_{A_1} = 1)$ in the standard scenario, while in the VM scenario that of pion becomes unit $(F_\rho/F_\pi = 1)$ on the fixed point. We discuss the possibilities of the realization in these scenarios.

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