EHQG-Seminar
(jointly held as KMI seminar)

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title :

Derivation of Superselection Rules and an Interpretation of Invisible Colors

speaker :

Prof. Shogo Tanimura

(Graduate School of Information Science, Nagoya Univ.)

date/time :

June 12 (Tue) 17:00 PM

abstract :

In the ordinary formulation of quantum mechanics, physical observables are represented by self-adjoint operators. But, not all of self-adjoint operators in the theory correspond to physical observables in the real world. The superselection rule is a necessary condition imposed on a self-adjoint operator for being observable. Sometimes the superselection rule is regarded as a reasonable hypothesis that cannot be derived from the other principles. I introduce notions of covariant measurement and isolated conservation law. By using them I derived the superselection rules in a general scheme. As an application of this scheme I discuss why color-multiplet quantities in QCD are invisible in the macroscopic world.

references

arXiv:1112.5701
http://www.phys.cs.is.nagoya-u.ac.jp/~tanimura/paper/kokyuroku1774-2012.pdf

place :

Lecture Room 9 (ES034)
(The 3rd floor in the ES building)