

**LABORATORI NAZIONALI DEL GRAN SASSO**

**SEMINAR ANNOUNCEMENT**

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***“A diagrammatic treatment of  
neutrino oscillations”***

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*A new covariant wave-packet approach to neutrino flavor transitions in vacuum is developed. The approach is based on the technique of Macroscopic Feynman diagrams describing the lepton number violating processes of production and absorption of virtual massive neutrinos at the macroscopically separated space-time regions ("source" and "detector"). Accordingly, the flavor transitions are a result of interference of the diagrams with neutrinos of different masses in the intermediate states. The statistically averaged probability of the process is representable as a multidimensional integral of the product of the factors which describe the differential flux density of massless neutrinos from the source, differential cross section of the neutrino interaction with the detector and a dimensionless factor responsible for the flavor transition.*

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