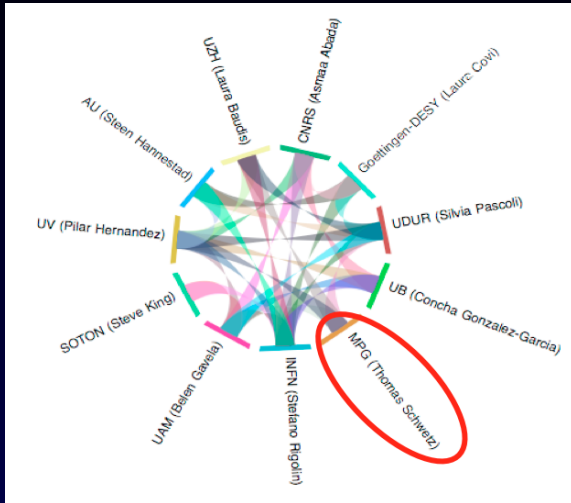


Invisibles MPG node

Thomas Schwetz (MPIK)

pre-meeting, Madrid, 29 March 2012



Core members of the MPG node

- ▶ Max-Planck-Institut für Kernphysik (MPIK), Heidelberg
Thomas Schwetz (PI)
Nassim Bozorgnia (from Sept. 2012)
- ▶ Max-Planck-Institut für Physik (MPP), Munich
Georg Raffelt
- ▶ Univ. Würzburg
Walter Winter

- ▶ Neutrino phenomenology
 - simulation of long-baseline neutrino oscillation experiments
 - GLOBES software
 - neutrinos and BSM
- ▶ Ultra-high energy neutrinos
 - neutrino flux predictions
 - simulation of astrophysical sources
 - NeuCosmA software

Univ. Würzburg - W. Winter

- ▶ Neutrino phenomenology

 - simulation of long-baseline neutrino oscillation experiments

 - GLOBES software

 - neutrinos and BSM

- ▶ Ultra-high energy neutrinos

 - neutrino flux predictions

 - simulation of astrophysical sources

 - NeuCosmA software

recent collaborations: Madrid, Durham (IDS-NF)

other related activities at Uni. Würzburg:

W. Porod (SUSY/LHC pheno), K. Mannheim (astro)

MPP Munich - G. Raffelt

- ▶ Neutrino astroparticle physics
neutrinos and supernovae
cosmological neutrinos
- ▶ Axions
astrophysical and cosmological axions
CAST search for solar axions

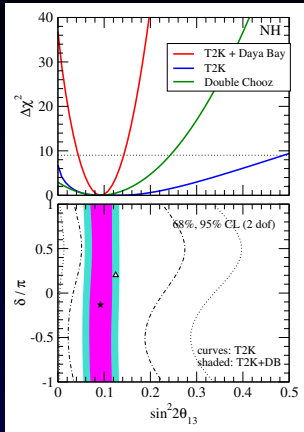
MPP Munich - G. Raffelt

- ▶ Neutrino astroparticle physics
neutrinos and supernovae
cosmological neutrinos
- ▶ Axions
astrophysical and cosmological axions
CAST search for solar axions

some recent collaborations: [Aahus](#), [Hamburg \(GOE-DESY\)](#)

other related activities at MPP and Munich:
[CRESST](#), [GERDA](#), [MAGIC](#), [TUM](#), [LMU](#),...

► Neutrino physics

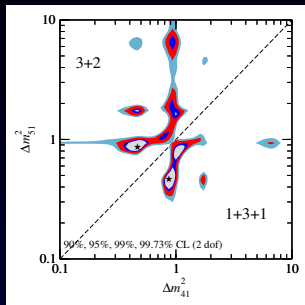


analysis of oscillation data - global fits

e.g., TS, Tortola, Valle, 1103, 1108

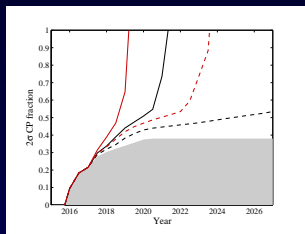
ν -fit: global fit collaboration in the framework of Invisibles in coll. with C. Gonzalez-Garcia (UB) M. Maltoni (UAM)

► Neutrino physics



eV-scale sterile neutrino analyses

e.g., Kopp, Maltoni, TS, 1103.4570

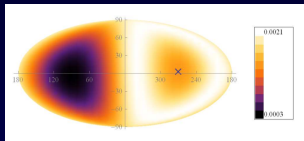
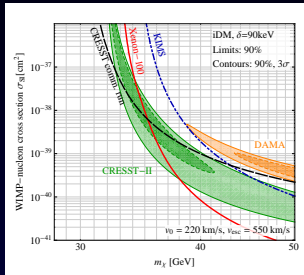


simulation of future experiments

e.g., "Identifying the neutrino mass ordering with INO and NOvA",

Blennow, TS, 1203.3388

► Dark matter phenomenology



- “Dark matter attempts for CoGeNT and DAMA”, TS, Zupan, 1106
- “Light dark matter in the light of CRESST-II”, Kopp, TS, Zupan, 1110
- “On the annual modulation signal in dark matter direct detection”, Herrero-Garcia, TS, Zupan, 1112
- “Higgs portal, fermionic dark matter, and a Standard Model like Higgs at 125 GeV”, Lopez-Honorez, TS, Zupan, 1203
- “Channeling in direct dark matter detection I, II”, Bozorgnia, Gelmini, Gondolo, 10
- “Ring-like features in directional dark matter detection”, Bozorgnia, Gelmini, Gondolo, 11

MPIK Heidelberg - T. Schwetz, N. Bozorgnia

other related activities at MPIK and Heidelberg:

- ▶ MPIK division of M. Lindner:
 - ▶ theory: E. Akhmedov, W. Rodejohann, ~ 6 postdocs, students
neutrino physics
dark matter
BSM
 - ▶ experiments: GERDA, DoubleChooz, Borexino, XENON
- ▶ others at MPIK/Heidelberg: HESS, Univ. Heidelberg,...

Thank you!

