**IceCube Institutional Memorandum Of Understanding (MOU)**

**Scope of Work**

**RWTH Aachen**

**Christopher Wiebusch**

**Ph.D Scientists** (Faculty Scientist/Post Doc Grads Master): **2** (1 1 11)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Labor Cat.** | **Names** | **WBS L3** | **Tasks** | **WBS 2.1** | **WBS 2.2** | **WBS 2.3** | **WBS 2.4** | **WBS 2.5** | **Grand Total** |
| Program Management | Detector Maintenance & Operations | Computing & Data Management | Triggering & Filtering | Data Quality, Reconstruction & Simulation Tools |
| KE | WIEBUSCH, CHRISTOPHER | Administration | ExecCom member | 0.20 |  |  |  |  | 0.20 |
|  |  | Administration | PubCom member | 0.10 |  |  |  |  | 0.10 |
|   | **WIEBUSCH, CHRISTOPHER Total** |  | **0.30** |  |  |  |  | **0.30** |
| PO | AUFFENBERG, JAN | Engineering and R&D Support | Surface Veto, IceCube extensions | 0.30 |  |   |   |   | 0.30 |
|   | **AUFFENBERG, JAN Total** | **0.30** |  |  |  |  | **0.30** |
| GR | BLUMENTHAL, JAN | Detector Monitoring | Monitoring contact |  | 0.05 |  |  |  | 0.05 |
|  | Reconstruction/ Analysis tools | IceCube integration in Fittino/Astrofit |  |  |  |  | 0.10 | 0.10 |
|  | PAUL, LARRISA | Detector Monitoring | RASTA data processing |  | 0.10 |  |  |  | 0.10 |
|  |  | Simulation Production | Simulation Production on cluster/GRID |  |  | 0.10 |  |  | 0.10 |
|  | WALLRAFF, MARIUS | Reconstruction/ Analysis tools | Finite track reconstruction |  |  |  |  | 0.10 | 0.10 |
|  | Reconstruction/ Analysis tools | nuCraft |  |  |  |  | 0.20 | 0.20 |
|   | VEHRING, MARKUS | Reconstruction/ Analysis tools | Genie MC development & data production – framework |  |  | 0.20 |  |  | 0.20 |
|  |  | Simulation Production | Low energy Simulation Production  |  |  | 0.20 |  |  | 0.20 |
|   | HEINEN, DIRK | Engineering and R&D Support | Acoustic R&D Support | 0.10 |  |  |  |  | 0.10 |
|  | Leif Rädel | SimulationProduction | Geant Simulations |  |  | 0.05 |  |  | 0.05 |
|  |  | SimulationPrograms | Light yield |  |  |  |  | 0.05 | 0.05 |
|  | Physics Filters | L3 IC86-2 diffuse data stream |  |  |  | 0.20 |  | 0.20 |
|  | SCHOENEN, SEBASTIAN | SimulationPrograms | Global Likelihood Fits, KDE-tools |  |  |  |  | 0.10 | 0.10 |
|  | REIMAN, RENE | Simulation Production | GPU Mass production on AC-RZ cluster |  |  | 0.20 |  |  | 0.20 |
|  | GR | Detector Monitoring |  |  | 0.12 |  |  |  | 0.12 |
|  | **GR Total** |  |  | **0.10** | **0.27** | **0.75** | **0.20** | **0.55** | **1.87** |
|  | **RWTH Total:** |  |  | **0.70** | **0.27** | **0.75** | **0.20** | **0.55** | **2.47** |

**Diplom/Master Students M&O Contribution:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Labor Cat.** | **Names** | **WBS L3** | **Tasks** | **WBS 2.1** | **WBS 2.2** | **WBS 2.3** | **WBS 2.4** | **WBS 2.5** | **Grand Total** |
| Program Management | Detector Maintenance & Operations | Computing & Data Management | Triggering & Filtering | Data Quality, Reconstruction & Simulation Tools |
|  | Christian Haack | SimulationPrograms | Maintenance / Addition of knee weights to nuflux module |  |  |  |  | 0.10 | 0.10 |
|  | SimulationProduction | DecaCube Simulations |  |  |  |  | 0.20 | 0.20 |
|  | Hallen, Patrik | Reconstruction/ Analysis tools | Taupede reconstruction |  |  |  |  | 0.10 | 0.10 |
|  | Jennifer Pütz | Physics Filters | IC79 diffuse data selection |  |  |  | 0.10 |  | 0.10 |
|  | **Diploma/Master Students Total** |  |  |  |  | **0.10** | **0.40** | **0.50** |

**Faculty:**

Christopher Wiebusch -

**Scientists and Post Docs:**

Jan Auffenberg - High energy surface extension, (IceVeto).

**Ph.D. Students:**

Martin Bissok - Thesis topic: Dark matter from gal. center

Jan Blumenthal - Thesis topic: global dark matter fits

Marius Wallraff - Thesis topic: Sterile neutrinos

Larissa Paul - Thesis topic: RASTA

Markus Vehring Thesis topic: Atm. Neutrino oscillations

Dirk Heinen Thesis topic: Acoustic in ice navigation system (EnEx)

Leif Rädel Thesis topic: Multi year diffuse muon neutrino analysis

Sebastian Schönen Mag.Monopole Thesis topic: Multi year muon neutrino diffuse analysis

Simon Zierke Thesis topic: Acoustic in ice navigation system (EnEx)

Rene Reimann Multipole analysis, Thesis topic : Cosmic neutrino sources

Martin Leuermann Ang.Korrelation, Thesis topic: tbd

**Diploma/Master Students**

Christian Haack - IceCube++/DecaCube

Pavel Gretskov - Dark matter exclusions on effective theories

Anna Kriesten - Oscillation analysis : Atmospheric Muon Background

Jenny Pütz - IC79 diffuse muon neutrino analysis

Denise Hellwig - Seasonal variations atmospheric neutrinos

Christian Wichary - Oscillation analysis :Electron Neutrino Background

Franziska Scholz - Acoustic sensors front-end electronics (EnEx)

Ömer Penek - Cherenkov light yield calculation

Martin Rongen - Thermoacoustic effect

Ania Koob - Oscillation analysis : 3 flavor fits

David Gier - Time dependent analysis of the DeepCore Data (GRB)

Johannes Kirchmair – Mesung der akustischen Abschwächungslänge (EnEx)