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

**Scope of Work**

**RWTH Aachen**

**Christopher Wiebusch**

**Ph.D Scientists** (Faculty Scientist/Post Doc Grads): **1** (1 0 12)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |
|  | **WIEBUSCH, CHRISTOPHER Total** | |  | **0.20** |  |  |  |  | **0.20** |
| GR | BLUMENTHAL, JAN | Detector Monitoring | Monitoring contact |  | 0.05 |  |  |  | 0.05 |
|  | PAUL, LARRISA | Detector Monitoring | RASTA data processing |  | 0.10 |  |  |  | 0.10 |
|  |  | Simulation Production | Simulation Production on cluster/GRID |  |  | 0.15 |  |  | 0.15 |
|  |  | Engineering and R&D Support | SPATS SD Maintenance & Analysis | 0.10 |  |  |  |  | 0.10 |
|  | WALLRAFF, MARIUS | Reconstruction/ Analysis tools | Finite track reconstruction |  |  |  |  | 0.10 | 0.10 |
|  | Reconstruction/ Analysis tools | nuCraft |  |  |  |  | 0.25 | 0.25 |
|  | VEHRING, MARKUS | Reconstruction/ Analysis tools | Genie MC development & data production |  |  | 0.20 |  |  | 0.20 |
|  |  | Simulation Production | Simulation Production on GPU/CPU |  |  | 0.20 |  |  | 0.20 |
|  | HEINEN, DIRK | Engineering and R&D Support | Acoustic R&D Support | 0.10 |  |  |  |  | 0.10 |
|  | Leif Rädel | Simulation  Production | Geant Simulations |  |  | 0.10 |  |  | 0.10 |
|  | Simulation  Programs | Implementation of new light yield factors in IceCube software |  |  |  |  | 0.10 | 0.10 |
|  | Physics Filters | L3 IC86-1/2 diffuse data stream |  |  |  | 0.10 |  | 0.10 |
|  | SCHOENEN, SEBASTIAN | Simulation  Programs | Data systematics & Simulations for magnetic monopoles |  |  |  |  | 0.10 | 0.10 |
|  | ZIERKE, SIMON | Physics Filters | Kalman Filter for L2 slow particle filter |  |  |  | 0.10 |  | 0.10 |
|  | REIMAN, RENE | Simulation Production | GPU Mass production on AC-RZ cluster |  |  | 0.10 |  |  | 0.10 |
|  | GR | Detector Monitoring |  |  | 0.12 |  |  |  | 0.12 |
|  | **GR Total** |  |  | **0.20** | **0.27** | **0.75** | **0.20** | **0.55** | **1.97** |
|  | **RWTH Total:** |  |  | **0.40** | **0.27** | **0.75** | **0.20** | **0.55** | **2.17** |

**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 | Simulation  Programs | Addition of knee weights to nuflux module |  |  |  |  | 0.10 | 0.10 |
|  | Simulation  Production | DekaCube Simulations |  |  |  |  | 0.10 | 0.10 |
|  | Reconstruction/ Analysis tools | Photspilines for finite reco |  |  |  |  | 0.10 | 0.10 |
|  | KRINGS, Kai/ COENDERS Stefan | Simulation Production | Analysis tools for PINGU, Simulation Production for PINGU |  |  | 0.10 |  | 0.10 | 0.20 |
|  | Engineering and R&D Support | Pingu design study | 0.10 |  |  |  |  | 0.10 |
|  | Hallen, Patrik | Reconstruction/ Analysis tools | Milipede & tau reconstruction |  |  |  |  | 0.20 | 0.20 |
|  | **Diploma/Master Students Total** | |  | **0.10** |  | **0.10** |  | **0.60** | **0.80** |

**Faculty:**

Christopher Wiebusch -

**Scientists and Post Docs:**

Jan Auffenberg (ab Nov) - tbd

**Ph.D. Students:**

Sebastian Euler - Thesis topic: DeepCore atm neutrino oscillations

Anne Schukraft - Diffuse analysis, Seasonal variations

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

Jan Blumenthal - Thesis topic: global dark matter fits

Marius Wallraff - Thesis topic:Sterile neutrinos IC59 + x

Larissa Paul - Thesis topic: RASTA

Markus Vehring Thesis topic: Atm. Neutrino oscillations

Dirk Heinen Thesis topic: Acoustic navigation system for IceMole

Leif Rädel Thesis topic: multi year diffuse analysis

Sebastian Schönen Magnetic monopoles. Thesis topic: multi year diffuse analysis

Simon Zierke Acoustic navigation system for IceMole

Rene Reimann - Multipole analysis, Thesis topic : diffuse analysis

**Diploma/Master Students**

Patrick Hallen - Tau neutrinos.

Stefan Coenders - Pingu oscillation sensititvity matter effects of Earth interior

Kai Krings - Pingu oscillation sensitivity hierachy

Kai Jagielski - Seasonal variations atm neutrinos

Martin Leuermann - Multipole, Point sources

Christian Haack - IceCube++/DekaCube

Pavel Greskov - Dark matter exclusions on effective theories

Anna Kriesten - IC-79 oscillation analysis : Background

Jenny Pütz - IC79 diffuse muon neutrino analysis

Denise Hellwig - Seasonal variations atm neutrinos

Christian Wichary - Oscillations ( ?)

Franziska Scholz - Enceladus explorer

Ömer Penek - Cherenkov light yield calculation

Martin Rongen - Thermoakoustic effect

Ania Koob - Oscillations 3 flavor fits

David Gier - GRB/Multipole (tbd)