**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 9 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 | Detector Calibration | Surface detectors calibration |  | 0.10 |   |   |  | 0.10 |
| Detector Calibration | IceAct |  | 0.20 |  |  |  | 0.20 |
| Engineering and R&D Support | Surface detectors Performance & Simulation | 0.10 |  |  |  |  | 0.10 |
|   | **AUFFENBERG, JAN Total** | **0.10** | **0.30** |  |  |  | **0.40** |
| GR | HAACK, CHRISTIAN | Simulation Programs | Maintenance / Addition of seasons weights to nuflux module |  |  |  |  | 0.10 | 0.10 |
|  | Simulation Production | Simulation production (ng) |  |  | 0.30 |  |  | 0.30 |
|  | Simulation Production | Simulation Tools (ng) |  |  | 0.10 |  |  | 0.10 |
|  |  | Simulation Production | Simulation Production on cluster/GRID |  |  | 0.10 |  |  | 0.10 |
|  | WALLRAFF, MARIUS | Reconstruction/ Analysis tools | nuCraft |  |  |  |  | 0.10 | 0.10 |
|   | VEHRING, MARKUS | Reconstruction/ Analysis tools | CLSIM Hyrid maintenance |  |  |  |  | 0.10 | 0.10 |
|  |  | Simulation Production | Low energy Simulation Production  |  |  | 0.10 |  |  | 0.10 |
|  | Leif, Rädel | Detector Calibration | IceAct commissioning |  | 0.20 |  |  |  | 0.20 |
|  |  | Physics Filters | L3 IC86-x muon data stream, Skripts & Monitoring |  |  |  | 0.20 |  | 0.20 |
|  | SCHOENEN, SEBASTIAN | Simulation Programs | KDE Tools KDE and multi-llh |  |  |  |  | 0.10 | 0.10 |
|  | Detector Calibration | IceAct commissioning |  | 0.10 |  |  |  | 0.10 |
|  | Simulation Production | Benchmarking diffuse analysis |  |  | 0.10 |  |  | 0.10 |
|  | REIMAN, RENE | Simulation Production | AC-RZ GPU/CPU cluster maint. iceprod and mass production |  |  | 0.30 |  |  | 0.30 |
|  | RONGEN, MARTIN | Detector Calibration | Hole Ice calibration |  | 0.20 |  |  |  | 0.20 |
|  | Detector Calibration | Gen2 DOM Calibration and R&D |  | 0.20 |  |  |  | 0.20 |
|  | Detector Monitoring | Detector monitoring shifts |  | 0.05 |  |  |  | 0.05 |
|  | LEUERMANN, MARTIN | Reconstruction/ Analysis tools | Finite track reconstruction, PegLeg Reconstruction |  |  |  |  | 0.30 | 0.30 |
|  | GR | Detector Monitoring |  |  | 0.12 |  |  |  | 0.12 |
|  | **GR Total** |  |  | **0.00** | **0.87** | **1.00** | **0.20** | **0.70** | **2.77** |
|  | **RWTH Total:** |  |  | **0.40** | **1.17** | **1.00** | **0.20** | **0.70** | **3.47** |

**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 |
| Master | Bengt Hansmann | Simulation Production | IceAct Siimulation |  |  | 0.05 |  |  |  |
| Stefan Wickmann | Engineering and R&D Support | Development acoustic positioning sensors |  | 0.20 |  |  |  |  |
| Jacob Leuner | Simulation Production | Gen2 Geometry optimization |  |  | 0.05 |  |  |  |
| Richard Konietz | Simulation Production | Gen2 Geometry optimization |  |  | 0.05 |  |  |  |
| Julian Kemp | Engineering and R&D Support | IceVeto R&D |  | 0.10 |  |  |  |  |
| Merlin Schaufel | Engineering and R&D Support | IceAct DAQ |  |  |  | 0.05 |  |  |
|  | **Diploma/Master Students Total** |  |  | **0.30** | **0.15** | **0.05** |  | **0.50** |

**Faculty:**

Christopher Wiebusch -

**Scientists and Post Docs:**

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

**Ph.D. Students:**

Marius Wallraff - Thesis topic: Sterile neutrinos

Markus Vehring Thesis topic: Atm. Neutrino oscillations

Larissa Paul Thesis topic RASTA

Leif Rädel Thesis topic: Multi year diffuse muon neutrino analysis

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

Rene Reimann Multipole analysis, Thesis topic : Cosmic neutrino sources

Martin Leuermann Ang.Korrelation, Thesis topic: Numu masshierarchy analysis

Martin Rongen IceCube Gen2 R&D, Thesis Topic: Gen 2 DOMs

Christian Haack IceCube-gen2. Thesis Topic: Cosmic neutrino sources

**Diploma/Master Students**

Stefan Wickmann Acoustic transducers for Gen 2 doms

Lisa Schumacher Angular correlation analysis

Michael Schimp Angular Correlation analysis

Martin Glagla Galactic Halo analysis

Martin Stahlberg Vertical starting muon events and IceTop

Julian Kemp IceVeto

Richard Konietz Gen-2 Simulations

Jacob Leuner Gen-2 Simulations

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

Bengt Hansmann IceAct Simulations

Tim Hansmann IceVeto Simulations