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

**Scope Of Work**

**Universität Dortmund**

**Wolfgang Rhode**

**Ph.D Scientists** (Faculty Scientist/Post Doc Grads): **2** (1 1 4)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 | RUHE, TIM | Physics Filters | Physics filters |   |   |  |  0.20 |   | 0.20 |
|   | **RUHE, TIM Total** |  |  |  |  | **0.20** |  | **0.20** |
| SC | PIELOTH, DAMIAN | Computing Resources | Coordinate GRID computing in Germany |   |   | 0.25 |   |   | 0.25 |
|   | **PIELOTH, DAMIAN Total** |  |  |  | **0.25** |  |  | **0.25** |
| GR | DTMD GR | Detector Monitoring | Detector Monitoring |   | 0.03 |   |   |   | 0.03 |
|   | ZIEMANN, JAN | Simulation Production | Maintenance of the local IceCube MC Production |   |   | 0.20 |   |   | 0.20 |
|   | SCHMITZ, MARTIN | Physics Filters | Physics filters |   |   |  |  0.20 |   | 0.20 |
|   | SCHERIAU, FLORIAN | Physics Filters | Physics filters |   |   |  |  0.20 |   | 0.20 |
|   | FACHS, THOMAS | Simulation Programs | PROPOSAL-IceProd integration and maintenance/support |   |   |   |   | 0.50 | 0.50 |
|   | **Ph.D. Students Total** |  |  | **0.03** | **0.20** | **0.40** | **0.50** | **1.13** |
| **DTMND Total** |  |  |  | **0.03** | **0.45** | **0,60** | **0.50** | **1.58** |

**Faculty:**

Wolfgang Rhode

**Scientists and Postdocs:**

Tim Ruhe 🡪 Filtering WBS 2.4 with 0.2 FTE

Analysis topics: Machine learning and two dimensional unfolding of various signals

**PhD Students (100% IceCube):**

Fabian Clevermann 🡪 (finishing his thesis)

 Thesis/Analysis topics: Spectral unfolding of the signal from stacked source positions

Martin Schmitz 🡪 Filtering WBS 2.4 with 0.2 FTE

Thesis/Analysis topics: Spectral unfolding of the signal from atmospheric muon neutrinos

Florian Scheriau 🡪 Filtering WBS 2.4 with 0.2 FTE

Thesis/Analysis topics: Machine learning for filtering and high quality sample definition

Jan-Hendrik Köhne 🡪(finishing his thesis)

Thesis/Analysis topics: Simulation of muon interactions (>10 GeV) in PROPOSAL, investigation of the corresponding systematic uncertainties

Tomasz Fuchs 🡪 2.5 PROPOSAL integration with 0.5 FTE

Thesis/Analysis topics: Simulation of muon interactions (<10 GeV) and neutrino interactions in PROPOSAL, investigation of the corresponding systematic uncertainties

Jan Ziemann 🡪 2.3 Maintenance of the local IceCube Monte Carlo production with 0.2 FTE

Thesis/Analysis topics: HPC in Astroparticle Physics

**General:**

The Dortmund group uses local resources (LiDO, PhiDO, DGRZR) for IceCube Monte Carlo production.

For this purpose per year 1,5 Mio CPU hours are used. (-> Jan Ziemann)