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

**Scope of Work**

**DESY-Zeuthen**

**Marek Kowalski (PI)**

**Ph.D Scientists** (Faculty (incl. retired) Scientist/Post Doc Grads): **8** (6 2 10)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 | KOWALSKI, MAREK | Administration | ExecCom member | 0.20 |  |  |  |  | 0.20 |
| **KOWALSKI, MAREK total** | **0.20** |  |  |  |  | **0.20** |
| ACKERMANN, MARKUS | Administration | PubCom member  | 0.10 |  |  |  |  | 0.10 |
| Computing Resources | DESY TIER-1 coordination |  |  | 0.20 |  |  | 0.20 |
| **ACKERMANN, MARKUS Total** | **0.10** |  | **0.20**  |  |  | **0.30** |
| KARG, TIMO | Engineering and R&D Support | Surface electronics, Optical detector R&D. | 0.10 |   |   |   |   | 0.10 |
| TFT Coordination | TFT Board Member |  |   |   |  0.10 |   | 0.10 |
|  | Physics filters | CR WG co-chair |  |  |  | 0.25 |  | 0.25 |
|  | **KARG, TIMO** **Total** |  |  | **0.10** |  |  | **0.35** |  | **0.45** |
|  | NAHNHAUER, ROLF | Engineering and R&D Support | Surface electronics, Optical detector R&D | 0.10 |  |  |  |  | 0.10 |
|   | **NAHNHAUER, ROLF Total** |  | **0.10** |  |  |  |  | **0.10** |
|  | YANEZ, JUAN-PABLO | Reconstruction/ Analysis Tools | Low-energy reconstruction |   |  |  |  | 0.10 | 0.10 |
|  | Engineering and R&D Support | Optical detector R&D | 0.10 |  |  |  |  | 0.10 |
|  | **YANEZ, JUAN-PABLO Total** | **0.10** |  |  |  | **0.10** | **0.20** |
| SC | Santen, Jakob | Simulation Production | Simulation production site manager in DESY |  |  | 0.20 |  |  | 0.20 |
|  |  | Reconstruction/ Analysis Tools | Spline fits |  |  |  |  | 0.15 | 0.15 |
|  | **SANTEN, JAKOB Total** |  |  | **0.20** |  | **0.15** | **0.35** |
|  | DESY SC | Detector Monitoring | Detector Monitoring |  | 0.05 |  |  |  | 0.05 |
|   | **DESY SC** **Total** |  |  | **0.05** |  |  |  | **0.05** |
| GR  | KINTSCHER, THOMAS | Reconstruction/ Analysis Tools | Gamma-ray follow up program maintenance |  |  |  |  | 0.10 | 0.10 |
| TERLIUK, ANDRII | Reconstruction/ Analysis Tools | Reconstruction Release Manager, Maintain Reconstruction Framework,DeepCore reconstruction |  |  |  |  | 0.30 | 0.30 |
| MOHRMANN, LARS | Reconstruction/ Analysis Tools | Likelihood fit package |  |  |  |  | 0.10 | 0.10 |
| USNER, MARCEL | Reconstruction/ Analysis Tools | Spline fits with anisotropy |  |  |  |  | 0.30 | 0.30 |
| STASIK, ALEXANDER | Reconstruction/ Analysis Tools | Online singlet stream |  |  |  |  | 0.20 | 0.20 |
| STOESSL, ACHIM | Data Storage & Transfer | Data Storage & Transfer |  |  | 0.10 |  |  | 0.10 |
|   | DESY GR | Detector Monitoring | Detector Monitoring |  | 0.12 |  |  |  | 0.12 |
|   |  | Simulation Production | Simulation Production Cluster |  |  | 0.15 |  |  | 0.15 |
|   | **DESY GR Total** |  |  | **0.12** | **0.25** |  | **1.00** | **1.37** |
| TE | DESY IT | Computing Resources | European Data Center -Distributed Computing, Labor |  |  | 1.00 |  |  | 1.00 |
|   | **DESY IT Total** |  |  |  | **1.00** |  |  | **1.00** |
| **DESY Total** |  |  | **0.60** | **0.17** | **1.65** | **0.35** | **1.25** | **4.02** |

**Faculty:**

Marek Kowalski – DESY Group lead, Optical/X-ray follow-up, PINGU

Markus Ackermann – Diffuse Neutrino Flux, Population studies

Elisa Bernardini – Point Sources, ToO

Timo Karg – TFT Board member, CR group co-convenor, R&D PINGU, IceTop

Rolf Nahnhauer – DeepCore, IceTop, PINGU R&D

**Retired Faculty:**

 Christian Spiering (L,+) – Past spokesperson

**Scientists and Post Docs:**

Jakob van Santen – Simulation production, Reconstruction improvements

 Analysis topics: Diffuse analyses

Juan Pablo Yanez – Deep Core/Neutrino oscillation

 Analysis topics: Constraints on oscillation parameters

**Ph.D. Students:**

Emanuel Jacobi – Search for magnetic monopoles

 Thesis/analysis topics: Search for slow monopoles with IC-86

Arne Schoenwald – Search for diffuse neutrinos

 Thesis/analysis topics: Search for diffuse astrophys. neutrinos with IC-59

Achim Stoessl – Search for diffuse neutrinos, flasher analysis, datat transfer

 Thesis/analysis topics: Search for uncontained shower-type events.

Torsten Gluesenkamp – Point sources, Zeuthen group administration

 Thesis/analysis topics: Search for neutrinos from Blazar populations.

Lars Mohrmann – Search for diffuse neutrinos, Likelihood analysis package

 Thesis/analysis topics: Global fit of IceCube diffuse searches.

Hans-Peter Bretz – Atm. Muon analysis

 Thesis/analysis topics: Atmospheric muon spectrum

Andrii Terliyuk – Energy reconstruction of low-energy events with DeepCore

 Thesis/analysis topics: Mass hierarchy analysis with DeepCore

Thomas Kintscher – Gamma-ray follow-up program, transient neutrino sources.

 Thesis/analysis topics: TBD

 Alexander Stasik – Operation of online system

 Thesis/Analysis topics: Search for high energy emission from

 Marcel Usner – Spline fits to photonics tables, particle reconstruction software

 Thesis/Analysis topics: tau neutrino detection