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

**Scope of Work**

**IceCube**

**Technische Universität München**

**Elisa Resconi**

**Ph.D Scientists** (Faculty Scientist/Post Doc Grads): **4** (1 3 8)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Labor Cat.** | **Names** | **WBS L3** | **Tasks** | **WBS 2.1** | **WBS 2.2** | **WBS 2.3** | **WBS 2.4** | **WBS 2.5** | **WBS 2.6** | **Grand Total** |
| Program Coordination | Detector Maintenance & Operations | Computing & Data Management  | Data Processing & Simulation  | Software | Calibration |
| PD | Krings, Kai | 2.5.1 | Software strike team |  |  |  |  | 0,2 |  |  |
|  | 2.5.3 | Maintenance Gulliver tool |  |  |  |  | 0,1 |  | 0,3 |
| PD | Wolf, Martin | 2.5.1 | Neutrino Source Technical Coordinator |  |  |  |  | 0,2 |  |  |
|  |  | 2.5.4 | Maintenance SkyLab, Development SkyLLH |  |  |  |  | 0,2 |  | 0,4 |
| PD | Niederhausen, Hans | 2.5.4 | Maintenance SkyLab, Development SkyLLH |  |  |  |  | 0,2 |  |  |
|  |  | 2.4.1 | Muon L3 Scripts |  |  |  | 0,1 |  |  | 0,3 |
| GR | Turcati, Andrea | 2.4.1 | Muon L3 Scripts |  |  |  | 0,2 |  |  | 0,2 |
| GR | Huber, Matthias | 2.4.1 | Muon L3 Scripts |  |  |  | 0,2 |  |  | 0,2 |
| GR | Karl, Martina  | 2.5.1 | Software strike team |  |  |  |  | 0,2 |  | 0,2 |
| GR | Glauch, Theo | 2.4.1 | Pass-2 |  |  |  | 0,2 |  |  | 0,2 |
| GR | Meighen-Berger, Stephan | 2.4.2 | Development of MCEq |  |  |  | 0,3 |  |  | 0,3 |
| GR | Henningsen, Felix  | 2.6.2 | Simulation / Calibration/ |  |  |  |  |  | 0,1 | 0,1 |
| GR | Holzapfel, Kilian | 2.6.2 | Simulation / Calibration/ IceCube Upgrade |  |  |  |  |  | 0,1 | 0,1 |
|  | TUM GR | Detector Monitoring | Detector Monitoring |  | 0,05 |  |  |  |  | 0,05 |
|   | **TUM GR Total** |  |  | 0,05 |  |  |  |  |  |
| **TUM Total** |  |  |  | **0,05** |  | 1 | 1,1 | 0,2 | 2,35 |

**IceCube Upgrade**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Labor Cat.** | **Names** | **WBS** | **Tasks** | **WBS 1.1** | **WBS 1.2** | **WBS 1.3** | **WBS 1.4** | **WBS 1.5** | **WBS 1.6** | **Grand Total** |
|  |  |  |  | Calibrations | Software |
| F | Resconi, Elisa  | 1.5 Calibration Assemblies | L3 Coordinator |  |  |  |  | 0,1 |  | 0,1 |
| PD | Krings, Kai | 1.6 Offline Software | POCAM Simulation |  |  |  |  |  | 0,1 | 0,1 |
| PD | Wolf, Martin | 1.6 Offline Software | POCAM Simulation |  |  |  |  |  | 0,1 | 0,1 |
| GR | Henningsen, Felix  | 1.5 Calibration Assemblies | POCAM, Calibration Special Device |  |  |  |  | 0,5 |  | 0,5 |
| GR | Rea , Immacolata | 1.5 Calibration Assemblies | POCAM, Calibration Special Device |  |  |  |  | 0,2 |  | 0,2 |
| GR | Holzapfel, Kilian | 1.5 Calibration Assemblies | POCAM, Calibration Special Device |  |  |  |  | 0,2 |  | 0,2 |
| **TUM Total** |  |  |  |  |  |  | 1 | 0,2 | 1,2 |

**Faculty:**

Elisa Resconi, L3 WBS 1.5 IceCube Upgrade

**Scientists and Post Docs:**

Kai Kring from 09.2018 till 06.2019 -Strike Team, maintaining the following projects: `gulliver`, `gulliver-modules`, and `lilliput`, Semi-diffuse analysis, MESE, Galactic plane

Martin Wolf from 07.2018 - Maintaining SkyLab, Developing SkyLLH, Software Development, Neutrino Sources analysis

Hans Niederhausen 12.2018 - Maintaining SkyLab, Developing SkyLLH, Software Development, Neutrino Sources analysis

**Ph.D. Students:**

Andrea Turcati from 01.2015 - Neutrino Sources

Matthias Huber from 01.2016 - Neutrino Sources

Martina Karl from 06.2018 - Neutrino Sources, Strike Team

Theo Glauch from 01.2018 - Neutrino Sources - Reconstruction, Machine Learning

Stephan Meighen-Berger from 02.2018 - Low Energy neutrino - Background simulation

Immacolata Rea from 01.2018 - IceCube Upgrade - Calibration, special devices

Felix Henningsen from 10.2018 - IceCube Upgrade - Calibration, special devices

Kilian Holzapfel from 04.2019 - IceCube Upgrade - Calibration, special devices

**Diploma/Master Students:**

Christian Spannfellner from 02.2019 IceCube Upgrade - Calibration, special devices

Tomas Kontrimas from 09.2018 Software development, SkyLab maintenance, SkyLLH development

**Bachelor Students:**

Leonard Geilen - IceCube Upgrade - Calibration, special devices

**Student help:**