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

**Scope of Work**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 | Van Eijndhoven Nick | Reconstruction Tools | development of reconstruction tools (IcePack framework), |   |   |   |   |  0.25 | 0.25 |
| Data Quality | data quality verification |   |   |   |   | 0.25 | 0.25 |
| **Van Eijndhoven Nick total** |  |  |  |  |  | **0.50** | **0.50** |
| De Clercq Catherine | administration | Institutional Lead | 0.20 |   |   |   |   | 0.20 |
| **De Clercq Catherine total** |  | **0.20** |  |  |  |  | **0.20** |
|     PO | De Vries, Krijn | Reconstruction Tools | muon track reconstruction in IceCube and DeepCore |   |   |   |   | 0.25 | 0.25 |
|   | Data Quality | GRB/AGN analysis |   |   |   |   | 0.25 | 0.25 |
|  | **De Vries, Krijn Total** |  |  |  |  |  | **0.50** | **0.50** |
|   | Golup, Geraldina  | Reconstruction tools | Muon track reconstruction for IceCube and DeepCore |   |   |  |   | 0.25  | 0.25 |
|   | Data Quality | GRB analysis |   |   |   |   | 0.25 | 0.25 |
|   | **Golup, Geraldina Total** |  |  |  |  |  | **0.50** | **0.50** |
|  | Lünemann, Jan | Reconstruction Tools | Low energy muon reconstruction |  |  |  |  | 0.25 | 0.25 |
|   |  |  |  |  |  |  | **0.25** | **0.25** |
| VUB PO | Detector Monitoring | Detector Monitoring |   | 0.06 |   |   |   | 0.06 |
|   | **VUB PO Total** |  |  | **0.06** |  |  |  | **0.06** |
| GR | Casier Martin  | Reconstruction Tools | muon track reconstruction in IceCube and DeepCore |   |   |   |   | 0.50 | 0.50 |
|   | **Casier Martin Total** |  |  |  |  |  | **0.50** | **0.50** |
|   | Brayeur Lionel  | Reconstruction Tools | muon track reconstruction in IceCube and DeepCore |   |   |   |   | 0.50 | 0.50 |
|   | **Brayeur Lionel Total** |  |  |  |  |  | **0.50** | **0.50** |
|   | Kunnen Jan  | Physics Filters | Filter for mow energy muons |   |   |   | 0.50 |   | 0.50 |
|   | **Kunnen Jan Total** |  |  |  |  | **0.50** |  | **0.50** |
|  | Maggi, Giuliano | Reconstruction Tools | muon track reconstruction in IceCube and DeepCore |  |  |  |  | 0.25 | 0.25 |
|  | Data Quality | AGN analysis |  |  |  |  | 0.25 | 0.25 |
|   | **Maggi, Giuliano Total** |  |  |  |  |  | **0.50** | **0.50** |
|   | VUB GR | Detector Monitoring | Detector Monitoring |   | 0.06 |   |   |   | 0.06 |
|   | **VUB GR Total** |  |  | **0.06** |  |  |  | **0.06** |
| **VUB Total**  |  | **0.20** | **0.12** |  | **0.50** | **3.25** | **4.07** |

**Vrije Universiteit Brussel**

**Catherine de Clercq**

**Ph.D Scientists** (Faculty Scientist/Post Doc Grads): **5** (2 3 4)

**Faculty:**

Catherine de Clercq Institutional Lead

Nick Van Eijndhoven Development of reconstruction tools (IcePack framework) - data quality verification

**Scientists/post-docs:**

Golup Geraldina Muon track reconstruction for IceCube and DeepCore - verification IceCube and DeepCore data quality

Analysis topics: GRB/AGN analysis

De Vries, Krijn Muon track reconstruction in IceCube and DeepCore

Analysis topics: GRB/AGN analysis

Jan Lünemann Low energy muon track reconstruction

Analysis topics: WIMP analysis

**Ph.D. Students:**

Jan Kunnen Filter for Southern hemisphere signals

 Analysis topics: WIMP analysis

Thesis topic: Search for neutrinos from WIMP annihilations in the center of the Earth

Lionel Brayeur Muon track reconstruction in IceCube and DeepCore

 Analysis topics: GRB analysis

 Thesis topic: Bayesian approach for a temporal and spatial distribution analysis in search for high-energy neutrinos from Gamma Ray Bursts

Martin Casier Muon track reconstruction in IceCube and DeepCore

Analysis topics: GRB analysis

 Thesis topic: Bayesian approach for a time series analysis in search for high-energy neutrinos from Gamma Ray Bursts

Maggi Giuliano Muon track reconstruction in IceCube and DeepCore

                 Analysis topics: AGN analysis

 Thesis topic: Bayesian approach for a spatial distribution analysis in search for high-energy neutrinos from Active Galactic Nuclei

**Diploma/Master Students:**