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

**Scope Of Work**

**Université Libre de Bruxelles**

**Juan Antonio Aguilar Sánchez**

**Ph.D Scientists** (Faculty Scientist/Post Doc Grads): **3** (2 1 4)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |
| KE | Aguilar Sánchez, Juan Antohio | Online Filter (Pnf) | Muon WG co-Chair |  | 0.25 |  |  |  |  | 0.25 |
|  | Administration | Institutional Lead | 0.20 |  |  |  |  |  | 0.20 |
|  | Administration | Member of ICC | 0.10 |  |  |  |  |  | 0.10 |
|  | Administration | Member of PubCom | 0.20 |  |  |  |  |  | 0.20 |
| Maris, Ioana (0.5FTE) | To be decided |  |  |  |  |  |  |  |  |
| Faculty Total | |  | 0.50 | 0.25 |  |  |  |  | 0.75 |
| PO | Zigfried Hampel Arias | To be decided |  |  |  |  |  |  |  |  |
|  | **PO Total** | |  |  |  |  |  |  |  |  |
| GR | ULB GR | Detector Monitoring | Monitoring Shifters |  | 0.12 |  |  |  |  | 0.12 |
|  | Raab, Christoph | Core Software | Software strike team |  |  |  |  | 0.25 |  | 0.25 |
|  | Renzi, Giovanni | Online Filter (Pnf) | Vertical event filter, WIMP L2 |  | 0.20 |  |  |  |  | 0.20 |
|  | Iovine, Nadège | To be decided |  |  |  |  |  |  |  |  |
|  | **ULB GR Total** | |  |  | **0.32** |  |  | **0.25** |  | **0.57** |
| **ULB Total** | |  |  | **0.50** | **0.57** |  |  | **0.25** |  | **1.32** |

**Faculty:**

Juan Antonio Aguilar – Muon WG co-lead, Simulation coordination board member

Ioana Maris – 0.5 FTE Cosmic Ray analysis and R&D for Surface Veto

**Scientists/post-docs:**

Zigfried Hampel-Arias - R&D for the Surface Veto

**Graduate Students**

Isabelle Ansseau – Chaged topic of PhD. Now doing SiPM characterization.

Thesis/Analysis topics: Characterization of SiPM and application to astroparticle and proton therapy

Nadège Iovine – Service work to be defined

Thesis/Analysis topics: Dark matter from the Galactic Center (combined analysis with ANTARES)

Giovani Renzi – Vertical event filter.

Thesis/Analysis topics: Analysis on earth wimps dark matter

Christoph Raab – Service: IceCube-Gent2 reconstructions.

Thesis/Analysis topics: Time dependent search for Blazars

**Computing Resources**

**IIHE (ULB-VUB)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **2017** | | **2018** | |
|  | **CPU Cores** | **GPU Cards** | **CPU Cores** | **GPU Cards** |
| Pledged resources in the IceCube common cluster | Up to 1000 | 14 | Up to 1000 | 14 |

The computing resources in the table are provided by the IIHE (ULB-VUB), i.e. by ULB and VUB together.

The 14 GPU cards used for the production of MC samples for the collaboration. The jobs are launched centrally. From our side we cannot see whether the jobs run for IceCube or Gen2.

The CPU cores are used for the production of MC samples by the collaboration. In the course of 2018 up to a max of 1000 cores may be made available.

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