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

**Scope of Work**

**Ecole Polytechnique Federale de Lausanne**

**Mathieu Ribordy**

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

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 | MATHIEU RIBORDY | Supernova System | Development of the multi-hit detection technique |  | 0.2 |  |  |  | 0.2 |
|  |  | Simulation programs | Supernova detector (extension) responses |  |  |  |  | 0.2 | 0.2 |
|   | **MATHIEU RIBORDY Total** |  |  | **0.2** |  |  | **0.2** | **0.4** |
| PO | RONALD BRUIJN | Detector Monitoring | Detector Monitoring |   | 0.03 |   |   |  | 0.03 |
| Supernova System | Development of the multi-hit detection technique |  | 0.32 |  |  |  | 0.32 |
| Simulation programs | Supernova detector (extension) responses |  |  |  |  | 0.30 | 0.30 |
| Simulation Production | Run cluster EPFL |  |  | 0.15 |  |  | 0.15 |
|   | **RONALD BRUIJN Total** |  |  | **0.35** | **0.15** |  | **0.30** | **0.80** |
| **EPFL Total** |  |  |  | **0.55** | **0.15** |  | **0.50** | **1.20** |

**Faculty:**

Mathieu Ribordy

**Scientists and Post Docs:**

Ronald Bruijn

Supernova detection technique based on coincident hits with IceCube and a future dense core extension (PINGU). Phenomenological studies of the potential of a future dense core extension by means of the atm. neutrino beam (e.g. neutrino mass hierarchy).

**Grad Students:**

Shirit Cohen – Ultra high energy neutrinos. Service work inputs: SLF reconstruction