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

**Scope of Work**

**Sungkyunkwan University**

**Carsten Rott**

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Labor Cat.** | **Names** | **WBS Level 3** | | **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 | ROTT, CARSTEN | Physics Filters | | BSM WG Co-Lead |  |  |  | 0.25 |  | 0.25 |
|  | Education & Outreach | | Outreach | 0.05 |  |  |  |  | 0.05 |
|  | **ROTT, CARSTEN Total** | | |  | **0.05** |  |  | **0.25** |  | **0.30** |
| PO | BOSE, DEBANJAN | | Reconstruction / Analysis tools | Photon tracking / ice-properties calibration |  |  |  |  | 0.20 | 0.20 |
|  |  | | Engineering Support and R&D | Reconstruction tools for PINGU |  | 0.15 |  |  |  | 0.15 |
|  | **BOSE, DEBANJAN Total** | | |  |  | **0.15** |  |  | **0.20** | **0.35** |
| GR | JEONG, DONGVOUNG | | Detector Monitoring | Detector Monitoring |  | 0.03 |  |  |  | 0.03 |
|  | Physics Filters | Online filter development & testing |  |  |  | 0.20 |  | 0.20 |
|  | **JEONG, DONGVOUNG Total** | | |  |  | **0.03** |  | **0.20** |  | **0.23** |
| **SUNGKYUNKWAN Total** | | | | | **0.05** | **0.18** |  | **0.45** | **0.20** | **0.88** |

**Faculty:**

Carsten Rott – BSM-wg co-lead, outreach.

**Scientists and Post Docs:**

Debanjan Bose - PINGU R&D, ice-property studies and reconstruction tools for PINGU.

Analysis topics: involving data from DeepCore and physics feasibility studies for PINGU

**Ph.D. Students:**

Dongyoung Jeong - Detector monitoring, online filter development and testing 20%

Thesis topic: Solar WIMP search using energy spectral information with DeepCore.

**Diploma/Master Students:**

Seongjin In - Detector monitoring

**Description of planned analysis:**

The SKKU group will focus on analyses involving data from DeepCore and physics feasibility studies for PINGU. The PhD student thesis topic will be a Solar WIMP search using energy spectral information with DeepCore.

**Description of Service work**

The SKKU group will maintain and develop filters related to DeepCore and WIMP analyses. We will investigate hole ice properties with the goal to advance our understanding of individual DOMs and their local ice environment in studies using down-going muons and flasher data.