

Budget Justification

1. Travel

Travel from USC to PSI is necessary for the successful completion of the project. One of us will attend yearly MUSE collaboration meetings in each of the four years of the project's duration; item 1 in Table 2. After building the scintillation detectors we expect two of us to stay at PSI for one month (31 days) to mount, test, and commission the detectors at PSI; item 2. Our graduate student is expected to stay at PSI for extended periods of time during the two-year data-taking phase of the experiment. We estimate four one-month long trips in total; item 3. Other members of our group will make additional 14 trips to PSI for two-week long experiment shifts; item 4.

Table 1: Travel cost.

Year	Item	Trips	Description	Days	Unit Price USD	Total Price USD
1	1	1	Collaboration meeting	6	\$2,460	\$2,460
			Year 1 total			\$2,460
2	1	1	Collaboration meeting	6	\$2,460	\$2,460
	2	2	Detector installation	31	\$6,560	\$13,120
			Year 2 total			\$15,580
3	1	1	Collaboration meeting	6	\$2,460	\$2,460
	3	2	Graduate student on site	31	\$6,560	\$13,120
	4	7	Two-week experiment shifts	14	\$3,840	\$26,880
			Year 3 total			\$42,460
4	1	1	Collaboration meeting	6	\$2,460	\$2,460
	3	2	Graduate student on site	31	\$6,560	\$13,120
	4	7	Two-week experiment shifts	14	\$3,840	\$26,880
			Year 4 total			\$42,460
			Total			\$102,960

Travel-cost estimates for trips to PSI are based on an average of \$1500 for airfare from Columbia, SC to Zürich and local travel costs, \$100 accommodation per day, \$50 meals per day, and for some members of our group \$100 cost for visa (for stays over 8 days).

2. Indirect Costs

The on-campus training and service rate is 33% of the total direct costs excluding equipment and tuition.