

# nuSTORM Expression of Interest

# Lead authors:

|          |  |                               |           |
|----------|--|-------------------------------|-----------|
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# Timetable:

- **Draft 1 released for comments on the 12<sup>th</sup> March 2013:**  
[with a comment deadline of 26<sup>th</sup> March 2013]
  - **Comments received so far summarised in a moment**
- **SPSC meets on 9<sup>th</sup> and 10<sup>th</sup> April 2013:**
  - **I believe we should submit EoI for initial consideration at this meeting;**
- **SPSC meeting in June dedicated to neutrino programme:**
  - **Submission in time for initial consideration at April meeting would give us the opportunity of a “slot” at the June meeting;**
- **Propose final deadline for comments:**
  - **31<sup>st</sup> March 2013**

## Comments received:

- **Sanjib Argawalla:** [Done]
  - **Change of institution**
- **Walter Winter:** [Bayes, Kopp]
  - **Mention new MiniBooNE result (1303.2588)**
  - **Update discussion of sensitivities in section 3.2.3 to include disappearance channels (1204.2671)**
- **Ryan Bayes and Chris Tunnel:** [Done]
  - **Citations in sterile neutrino detector section**
- **Sampa Bhadra:** [Done]

P. Kyberd, D.R. Smith  
*Brunel University West London, Uxbridge, Middlesex UB8 3PH, UK*

L. Coney  
*Department of Physics and Astronomy, University of California, Riverside, CA 92521, USA*

S. Pascoli  
*Institute for Particle Physics Phenomenology, Department of Physics, University of Durham, Science Laboratories, South Rd, Durham, DH1 3LE, UK*

D. Aday, C. Ankenbrandt, S.J. Brice, A.D. Bross, H. Cease, J. Kopp, A. Liu<sup>1</sup>, N. Mokhov, J. Morfin, D. Neuffer, M. Popovic, P. Rubinov, S. Striganov  
*Fermilab, P.O. Box 500, Batavia, IL 60510-5011, USA*  
<sup>1</sup> *Also at Indiana University Bloomington, 107 S Indiana Ave, Bloomington, IN 47405, USA*

E. Wildner  
*CERN, CH-1211, Geneva 23, Switzerland*

A. Blondel, A. Bravar, F. Dufour, Y. Karadzov, A. Korzenev, E. Noah, M. Ravonel, M. Rayner, R. Asfandiyarov, A. Haesler, C. Martin, E. Scantamburlo, F. Cadoux  
*University de Geneve, 24, Quai Ernest-Ansermet, 1211 Geneva 4, Suisse*

R. Bayes, F.J.P. Soler  
*School of Physics and Astronomy, Kelvin Building, University of Glasgow, Glasgow G12 8QQ, Scotland, UK*

J. Kopp  
*Max-Planck-Institut für Kernphysik, PO Box 103980, 69029 Heidelberg, Germany*

D. Colling, A. Dobbs, J. Dobson, P. Dornan, K. Long, J. Pasternak, E. Santos, J.K. Sedgbeer, M.O. Wascko, Y. Uchida  
*Physics Department, Blackett Laboratory, Imperial College London, Exhibition Road, London, SW7 2AZ, UK*

S.K. Agarwalla  
*Instituto de Fisica Corpuscular (IFIC), Centro Mixto CSIC-UVEG, Edificio Investigacion Paterna, Apartado 22085, 46071 Valencia, Spain*

S.A. Bogacz  
*Thomas Jefferson National Laboratory, 12000 Jefferson Avenue, Newport News, VA 23606, USA*

Y. Mori, J.B. Lagrange  
*Kyoto University, Research Reactor Institute, 2Asashiro-Nishi, Kumatori-cho, Sennan-gun, Osaka 590-0494 Japan*

A. de Gouvêa  
*Northwestern University, Dept. of Physics and Astronomy, 2145 Sheridan Road, Evanston, Illinois 60208-3112 USA*

Y. Kuno, A. Sato  
*Osaka University, Graduate School, School of Science, 1-1 Machikaneyama-cho, Toyonaka, Osaka 560-0043, Japan*

S. Argawalla  
*Institute of Physics, Sachivalaya Marg, Sainik School Post, Bhubaneswar 751005, Orissa, India*

V. Blackmore, J. Cobb, C. D. Tunnell, A. Webber  
*Particle Physics Department, The Denys Wilkinson Building, Keble Road, Oxford, OX1 3RH, UK*

K.T. McDonald  
*Princeton University, Princeton, NJ, 08544, USA*

G. Hanson  
*Department of Physics and Astronomy, University of California, Riverside, CA 92521, US*

R. Edgecock, S. Ricciardi, C. Rogers  
*STFC Rutherford Appleton Laboratory, Chilton, Didcot, Oxfordshire, OX11 0QX, UK*

C. Booth  
*University of Sheffield, Dept. of Physics and Astronomy, Hicks Bldg., Sheffield S3 7RH, UK*

M. Dracos, N. Vassilopoulos  
*IPHC, Université de Strasbourg, CNRS/IN2P3, F-67037 Strasbourg, France*

J.M. Link, P. Huber  
*Virginia Polytechnic Inst. and State Univ., Physics Dept., Blacksburg, VA 24061-0435*

J.J. Back, S.B. Boyd, P.F. Harrison  
*Department of Physics, University of Warwick, Coventry, CV4 7AL, UK*

J.T. Sobczyk  
*Institute of Theoretical Physics, University of Wrocław, pl. M. Borna 9, 50-204, Wrocław, Poland*

W. Winter  
*Fakultät für Physik und Astronomie, Am Hubland, 97074 Würzburg, Germany*



| <i><b>Id</b></i> | <i><b>System, subsystem or component</b></i>                      | <i><b>Site specific item</b></i> |
|------------------|---|----------------------------------|
| <b>1</b>         | <b>nuSTORM</b>  |                                  |
| <b>1.1</b>       | <b>The accelerator facility</b>                                   |                                  |
| <i>1.1.2</i>     | <i>Proton beam</i>  |                                  |
| 1.1.2.1          | Extraction  | Yes                              |
| 1.1.2.2          | Septum  | Yes                              |
| 1.1.2.3          | Trasnport line  | Yes                              |
| 1.1.2.4          | Tunnels, surface buildings and infrastructure                     | Yes                              |
| <i>1.1.3</i>     | <i>Target and pion capture</i>                                    |                                  |
| 1.1.3.1          | Target assembly   | No                               |
| 1.1.3.2          | Horn  | No                               |
| 1.1.3.3          | Transport chanel  | Yes                              |
| 1.1.2.4          | Tunnels, surface buildings and infrastructure                     | Yes                              |
| <i>1.1.3</i>     | <i>Decay ring</i>   |                                  |
| 1.1.3.1          | Injection and extraction  | No                               |
| 1.1.3.2          | Injection straight  | No                               |
| 1.1.3.3          | Return straight   | No                               |
| 1.1.3.4          | Arcs  | No                               |
| 1.1.3.5          | Pion dump/muon degrader   | No                               |
| 1.1.2.4          | Tunnels, surface buildings and infrastructure                     | Yes                              |
| <b>1.2</b>       | <b>Neutrino detectors for sterile neutrino search</b>             |                                  |
| <i>1.2.1</i>     | <i>Far detector</i>   |                                  |
| 1.2.1.1          | Iron/scintillaror tracking calorimeter                            | No                               |
| 1.2.1.2          | Superconducting transmission line                                 | No                               |
| 1.2.1.3          | Readout and data acquisition                                      | No                               |
| 1.2.1.4          | Tunnels, surface buildings and infrastructure                     | Yes                              |
| <i>1.2.2</i>     | <i>Near detector</i>  |                                  |
| 1.2.2.1          | Iron/scintillaror tracking calorimeter                            | No                               |
| 1.2.2.2          | Excitation current loop   | No                               |
| 1.2.2.3          | Readout and data acquisition                                      | No                               |
| 1.2.2.4          | Tunnels, surface buildings and infrastructure                     | Yes                              |
| <i>1.2.3</i>     | <i>Neutrino detectors for neutrino-nucleus scattering studies</i> |                                  |
| 1.2.3.1          | Detector specification, design and fabriaction                    |                                  |
| 1.2.3.2          | Magnet  |                                  |
| 1.2.3.3          | Readout and data acquisition                                      | No                               |
| 1.2.3.4          | Tunnels, surface buildings and infrastructure                     | Yes                              |