The Croatian Centre of Research Excellence for Data Science and Advanced Cooperative Systems [0] invites applications for a postdoctoral position to join the group at the Rudjer Boskovic Institute, Zagreb, Croatia (RBI) working on the CMS experiment [1]. The RBI CMS group is involved in the LHC data analysis, operation of the CMS silicon tracker, and future detector developments.

Since the start of the LHC our group members have contributed and played leading roles in measurements of standard model processes, and several searches for new physics (anomalous gauge couplings, leptoquarks, dijet resonances, technicolor, new heavy bosons, etc.). We are currently active in the measurement of the Higgs boson production in association with a standard model gauge boson and the search for Higgs boson pair-production. The group is currently also active in the improvement of algorithms for b jet identification, boosted topologies, and has a significant involvement with CMS tracking detector operations and several aspects of track reconstruction, especially connected with the CMS pixel detector. We also have strong commitments to future detector developments using silicon technology, specifically in the Phase-2 upgrade of the CMS silicon pixel tracker. We have been involved in the last few years in several studies to estimate the effect of long term irradiation both on silicon sensors and on their readout electronics, in collaboration with the RD50 and RD53 collaborations.

At present our group comprises 6 physicists and 4 Ph.D. students.

The successful candidate is expected to join the group effort in the following areas:
- Play a key role in the CMS di-Higgs boson searches;
- Develop and improve techniques for identification of Higgs bosons decaying to b quarks;
- Contribute to the improvement of tracking reconstruction such as the development of GPU-based tracking algorithms for use in CMS;
- Supervision of students.

The position will be based at RBI in Zagreb, with the possibility of regular travel to CERN, conferences and workshops. The duration of the appointment will extend to October 31, 2022.

To qualify, you must have a Ph.D. in particle physics (or a related subject) or be close to obtaining one. Experience with high energy physics data analysis and statistical techniques is required. Experience with machine learning techniques is desirable but not necessary.

Interested candidates should submit their application, including curriculum vitae with
a list of main publications and a statement of research interests, and arrange for two letters of recommendation to be sent directly to Dr. Vuko Brigljevic at vuko.brigljevic@irb.hr.

The selection of candidates for interviews will begin immediately and will continue until the position is filled.

Enquiries regarding this position may be sent to Vuko Brigljevic (vuko.brigljevic@cern.ch), Dinko Ferencek (dinko.ferencek@cern.ch), Devdatta Majumder (devdatta.majumder@cern.ch), or Tanja Susa (tatjana.susa@cern.ch).

[0] https://urldefense.proofpoint.com/v2/url?u=https-3A__across-2Ddatascience.zci.hr_en_zci&d=DwIBAw&c=gRgGjJ3BkIsb5y6s49QqsA&r=N3bhkBFoC9IBDczDinpVjA&m=NkALALmWllokobEor3B9gkPwZYY3M5PcBVw0C6JNVPU&s=0O1BH-ZykgrM3wGROwhEe8TwzrXjSGf0p1ws5f7C8U&e=

[1] https://urldefense.proofpoint.com/v2/url?u=https-3A__www.irb.hr_eng_Divisions_Division-2Dof-2DExperimental-2DPhysics_Laboratory-2Dfor-2Dhigh-2Denergy-2Dphysics&d=DwIBAw&c=gRgGjJ3BkIsb5y6s49QqsA&r=N3bhkBFoC9IBDczDinpVjA&m=NkALALmWllokobEor3B9gkPwZYY3M5PcBVw0C6JNVPU&s=poHtA69IYFdESKxtEgs8RGjmn8oJxbIdeKXJHyk73Y&e=