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The International Physics Masterclasses and Particle Physics Workshops as professional development tools for high school teachers in São Paulo, Brazil (12' + 3')

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The São Paulo Research and Analysis Center (SPRACE) was implemented in 2003 to provide the necessary means for the participation of researchers from the State of São Paulo in high energy physics experiments. Currently the SPRACE researchers are members of the Compact Muon Solenoid (CMS) collaboration at CERN and its computers contribute to the processing, storage and analysis of data produced by that experiment. Simultaneously, the SPRACE team develops several education and outreach projects, among which we highlight the SPRACE electronic game and the participation in the International Physics Masterclasses promoted by IP-POG.

The organization of the International Masterclass at SPRACE started in 2008 and since then more than 800 high school students from 44 schools attended to the event. Since 2009 activities for teachers (Teachers' Day) also takes place and in 2012, perceiving the need to expand actions and provide specific formation for teachers who brought their students to the event but had no subsidies to continue the actions in their schools, the organizing team promoted the first Particle Physics Workshop. In this four-day event, teachers participated in lectures, discussions and experiments about high energy physics.

In October 2015, continuing the teacher professional development actions, the second Particle Physics Workshop was held with the aim of bringing to the participants the results of cutting edge research in this area and bring the physics studied in large accelerators to school. Teachers also had the opportunity to engage with scientists and share their experiences on particle physics teaching.

In this talk, we will present an analysis made up from questionnaires answered by teachers and students who attended to the last workshop and the 2016 edition of the Masterclasses. The aim is to evaluate the contributions of the workshop for the previous preparation of the Masterclasses attendants as well as identify strengths and weaknesses of the event and offer suggestions for the improvement and the implementation of new initiatives focused on education and outreach.

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