Title: New physics contributions to A(FB)(t(t)over-bar) at the Tevatron

Author(s): Biswal, Sudhansu S.[1]; Mitra, Subhadip[2]; **Santos, Rui**[3,4]; Sharma, Pankaj[5]; Singh, Ritesh K.[6]; Won, Miguel[7]

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Abstract: The Tevatron has measured a discrepancy relative to the standard model prediction in the forward-backward asymmetry in top quark pair production. This asymmetry grows with the rapidity difference of the two top quarks. It also increases with the invariant mass of the t (t) over bar pair, reaching, for high invariant masses, 3.4 standard deviations above the next-to-leading order prediction for the charge asymmetry of QCD. However, perfect agreement between experiment and the standard model was found in both total and differential cross section of top quark pair production. As this result could be a sign of new physics we have parametrized this new physics in terms of a complete set of dimension six operators involving the top quark. We have then used a Markov chain Monte Carlo approach in order to find the best set of parameters that fits the data, using all available data regarding top quark pair production at the Tevatron. We have found that just a very small number of operators are able to fit the data better than the standard model.

KeyWords Plus: Forward-Backward Asymmetry; Single-Top Production; Quark; Search; Collisions

Reprint Address: Biswal, SS (reprint author), Orissa Univ Agr & Technol, Dept Phys, Bhubaneswar 751003, Orissa, India.

Addresses:
1. Orissa Univ Agr & Technol, Dept Phys, Bhubaneswar 751003, Orissa, India
2. Inst Phys, Bhubaneswar 751005, Orissa, India
3. Inst Super Engn Lisboa, P-1959007 Lisbon, Portugal
4. Univ Lisbon, Ctr Fis Teor & Computac, Fac Ciencias, P-1649003 Lisbon, Portugal
5. Phys Res Lab, Ahmadabad 380009, Gujarat, India
6. Indian Inst Sci Educ & Res Kolkata, Dept Phys Sci, Calcutta 741252, W Bengal, India
7. Univ Coimbra, LIP Dept Fis, Coimbra, Portugal

E-mail Address: sudhansu.biswal@gmail.com; smitra@iopb.res.in; rsantos@cii.fc.ul.pt; pankajs@prl.res.in; ritesh.singh@iiserkol.ac.in;miguel.won@coimbra.lip.pt

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