Physics At Colliders

Midterm Meeting

Durham 9th – 12th April 2002

G. Costa

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MEMBERS OF THE INFN NODE (9)

PERMANENT STAFF

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Adressed Milestones

Mid−term milestones	Joint publications						
	1	21	37	42	43	59	60
3.	•	•				•	
5.	•						
7.	•						
8.	•		•				
10.				•	•		
14.	•						•

3. Electroweak corrections in $e^+ e^-$
5. Triple and quartic gauge−boson couplings
7. Multi−particle production
8. Production of Higgs bosons
10. Top production and decay at $e^+ e^-$ colliders
14. FCNC and CP violation in supersymmetric models

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Joint publications

Nodes	Joint publications						
	1	21	37	42	43	59	60
1. Granada	•						
2. Democritos	•						
3. Durham	•						
4. Karlsruhe	•						
5. Krakow	•						
6. Lisbon							
7. Montpellier	•	•	•	•	•	•	
8. Nijmegen	•						
9. INFN Padova	•	•	•	•	•	•	•
10. Torino	•						
11. Wien	•						•
12. PSI	•	•					
13. DESY Zeuthen	•						

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Main contributions of the INFN node

Work	Milestone	Task area	Other teams involved
Four–fermion processes at TeV energies in one–loop approximation, both in SM and MSSM. Implications for several observables at future $e^+ e^-$ colliders.	3. Electroweak corrections to gauge boson pair and 4 fermion production at $e^+ e^-$ colliders.	(i)	7
Production of supersymmetric scalar pairs in the MSSM at lepton colliders at TeV energies.	8. Production of (supersymmetric) Higgs bosons at LHC and $e^+ e^-$ colliders.	(ii)	7
Production of t t pairs in $e^+ e^-$ annihilation in the MSSM framework. Method for determination of the $\tan\beta$ parameter	10. Top production and decay at $e^+ e^-$ colliders.	(iii)	7
Flavour changing neutral current and CP violating processes in supersymmetric theories. CP asymmetry in $b \to s \gamma$ appears to be detectable at B–factories.	14. FCNC and CP violation in supersymmetric model.	(iv)	11

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Other contributions of the INFN node

Work	Milestone	Task area
Two−loop corrections of order $O(\alpha^2_{top})$ to the neutral Higgs boson masses in the MSSM.	6. Higher order corrections to precision observables in the SM and in the MSSM	(i, iv)
Implications of CP violating contributions for K and B physics in supersymmetric extensions of the SM	14. FCNC and CP violation in supersymmetric models.	(iv)
Graviscalar production at hadron colliders in extra dimensions (Randall−Sundrum) scenario.	17. Phenomenology of extra space dimensions at colliders.	(v)