

Summary and outcomes of the wg meetings

LNF, 25-26 June 07

From last meeting

- Luminosity:

Generator	Processes	Theory	Accuracy	Ref.
Bagenf	e^+e^-	$\mathcal{O}(\alpha)$	0.5%	INFN-AE-97-48
BabaYaga	$e^+e^-, \gamma\gamma, \mu^+\mu^-$	Parton Shower	0.5 ÷ 1%	hep-ph/0003268
BabaYaga@NLO	$e^+e^-, \gamma\gamma, \mu^+\mu^-$	$\mathcal{O}(\alpha) + \text{PS}$	$\sim 0.1\%$	hep-ph/0607181
MCGPJ	$e^+e^-, \mu^+\mu^- \dots$	$\mathcal{O}(\alpha) + \text{SF}$	$< 0.2\%$	hep-ph/0504233
BHWIDE	e^+e^-	$\mathcal{O}(\alpha)$ YFS	$\sim 1\%$ (LEP)	hep-ph/9608412

set up	BabaYaga@NLO	BHWIDE	LABSPV	$\delta_{BBH}(\%)$	$\delta_{BL}(\%)$
a.	6086.6(1)	6086.3(2)	6088.5(3)	0.005	0.030
b.	455.85(1)	455.73(1)	456.19(1)	0.030	0.080

★ Agreement within 0.1%!

From last meeting

- Fred comments:

- My comment:

Unaccounted $O(\alpha^2)$ from one-loop \otimes real photon radiation ?? should be calculated urgently !

- In distributions: known at 1% only, I think full 2-loop including mass effects are still important

In our opinion, the MC for Bhabha luminosity is in good shape. More work is needed to improve and cross-check the accuracy for $\gamma\gamma, \mu\mu, \mu\mu\gamma$ processes

From this meeting

- Janusz G.:
 - work is going on 2 loop Bhabha calculation
- Achim D.:
 - comparison btw Babayaga and BHWIDE for Babar
- Issue: Babayaga is extremely slow at Ψ_{4s} energies

MC for scan measurements

- From last meeting:
 - MC MCGPJ exists and cross-checked with BHWIDE (ee) and KKMC ($\mu\mu$). Accuracy is at 0.2%.

Cross check between Phokhara and “Arbuzov et al.” code for ISR just started

MC for ISR measurements

- PHOKHARA has been cross-checked with KKMC on ISR $\mu\mu\gamma$. Agreement at 0.3%. Accuracy of Phokhara is 0.5%.
- Many channels inside (last is $\Lambda\Lambda$). Work on 4π is finishing. Additional work on $2\pi, 2\mu$ is requested.
- For phi decays FEVA is available. Useful for asymmetry. Plan to upgrade it (i.e. by including a second photon).

WG name and logo: vote for it

Working Group name:



Working Group logo:

