

# Remarks at 2016 Guido Altarelli Memorial Symposium

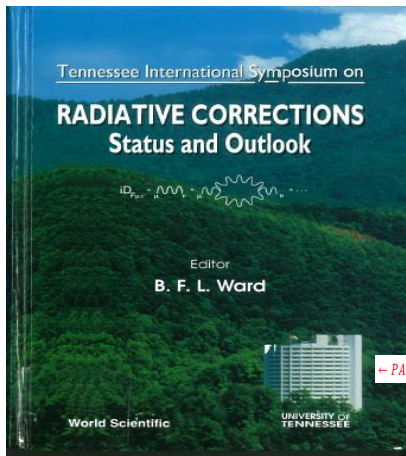
**B.F.L. Ward**

Baylor University, Waco, TX, USA

*June 10., 2016*

# A Special Event

- 1994 Tennessee International Symposium on Radiative Corrections: Status and Outlook(RADCOR Symposium Series)
- Gatlinburg, TN, June 27 - July 1, 1994, in the famous Park Vista Hotel in the Great Smokey Mountains



## ● RADCOR SERIES RESTART

### RADCOR SYMPOSIUM SERIES

1. **12th International Symposium on Radiative Corrections "Application of Quantum Field Theory to Phenomenology"** with LoopFest XIV: Workshop on Radiative Corrections for the LHC and Future Colliders (RADCOR 2015)  
15-19 Jun 2015. Los Angeles, California, C15-06-15.4.
2. **11th International Symposium on Radiative Corrections "Application of Quantum Field Theory to Phenomenology"** (RADCOR 2013)  
22-27 Sep 2013. Durham, UK , C13-09-22.
3. **10th International Symposium on Radiative Corrections: Applications of Quantum Field Theory to Phenomenology** (RADCOR 2011)  
26-30 Sep 2011. Mamallapuram, Tamil Nadu, India, C11-09-26.1.
4. **9th International Symposium on Radiative Corrections: Applications of Quantum Field Theory to Phenomenology** (RADCOR 2009)  
25-30 Oct 2009. Ascona, Switzerland, C09-10-25.1.
5. **8th International Symposium on Radiative Corrections: Application of Quantum Field Theory to Phenomenology** (RADCOR 2007)  
1-6 Oct 2007. Florence, Italy, C07-10-01.2.
6. **7th International Symposium on Radiative Corrections: Application of Quantum Field Theory to Phenomenology** (RADCOR 2005)  
2-7 Oct 2005. Shonan Village, Kanagawa, Japan, C05-10-02.2.
7. **6th International Symposium on Radiative Corrections: Application of Quantum Field Theory Phenomenology and 6th Zeuthen Workshop on Elementary Particle Theory (Loops and Legs in Quantum Field Theory)** (RADCOR 2002)  
8-13 Sep 2002. Kloster Banz, Germany, C02-09-08.1.
8. **5th International Symposium on Radiative Corrections: Applications of Quantum Field Theory to Phenomenology** (RADCOR 2000)  
11-15 Sep 2000. Carmel, California, C00-09-11.
9. **4th International Symposium on Radiative Corrections: Applications of Quantum Field Theory to Phenomenology** (RADCOR 1998)  
8-12 Sep 1998. Barcelona, Catalonia, Spain, C98-09-08.2.
10. **Cracow International Symposium on Radiative Corrections (CRAD 96)**  
1-5 Aug 1996. Cracow, Poland, C96-08-01.
11. **Tennessee International Symposium on Radiative Corrections: Status and Outlook**  
27 Jun - 1 Jul 1994. Gatlinburg, Tennessee, C94-06-27.3. -----
12. **Workshop on Radiative Corrections: Results and Perspectives** † 5-YEAR GAP †  
9-14 Jul 1989. Brighton, England, C89-07-09. -----
13. **Topical Conference on Radiative Corrections in SU(2)-L x U(1)**  
6-8 Jun 1983. Trieste, Italy, C83-06-06.1.

Guido and Norman Dombey approached me and helped me restart the Series in 1994 at Gatlinburg and it continues today. Guido at Gatlinburg -- the program, the venue, the EW Summary Talk, enjoying the Cherokee Indians, .... He was crucial to its success!



# A Special Event

## ● Guido at Gatlinburg

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### ELECTROWEAK PRECISION TESTS: A STATUS REPORT

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#### ABSTRACT

1. The Discovery of the Top and its Implications on the Higgs Mass.
2. Precision Electroweak Data and the Standard Model.
3. Update of the Epsilon Analysis.
4. Beyond the Standard Model: Specific Examples.
  - 4.1 Technicolour.
  - 4.2 Minimal Supersymmetric Standard Model.
  - 4.3 Models with an Extended Gauge Group.
5. Conclusion and Outlook.

#### 1. The Discovery of the Top and its Implications on the Higgs Mass

The most interesting recent development in particle physics is the indication from CDF at the Tevatron that the top quark has been probably detected with a mass  $m_t = 174 \pm 17$  GeV, as presented in the talk by Nodulman <sup>1</sup>. As we have heard from the talks of Blondel <sup>2</sup> and Hollik <sup>3</sup>, this value is well compatible with the indirect determination of  $m_t$  from precision electroweak data. This result is important first because it further restricts the possibility of new physics beyond the Standard Model. For example, it is no more possible that the true value of  $m_t$  is the relatively small value suggested by the results on  $\Gamma(Z \rightarrow b\bar{b})$  and that some new physics effect is responsible for the higher value obtained from extracting  $\epsilon_1 = \Delta\rho$  from the data. Also, the increased precision on  $m_t$  with respect to the indirect determination improves the possibility of constraining the Higgs mass  $m_H$  from the electroweak data. On this respect it is interesting to recall that the large value of  $m_t$  has important implications on  $m_H$  both in the minimal Standard Model <sup>4-6</sup> and in its minimal supersymmetric extension (denoted as MSSM in the following) <sup>7,8</sup>. I will now discuss the restrictions on  $m_H$  that follow from the CDF value of  $m_t$ .

## ● Guido's Legacy in RADCOR

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#### RADCOR IAB STATEMENT:

"The RADCOR IAB would like to express its sincere appreciation for the outstanding contribution that Prof. Guido Altarelli made to the RADCOR Symposium Series as an IAB member from its beginning and in his outstanding presentations and probing questions in the meetings themselves. The presentations are fortunately recorded in print so that they can guide future generations in the field forever. He was our great colleague and we all dearly miss him."