Proceedings of the Workshop on the
SLAC Damping Rings in the 21st Century

DR2000

Woodside, California

April 6-7, 1998

Stanford Linear Accelerator Center
Stanford University, Stanford, California 94309

Editors

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DR2000 Workshop Participants

*Presenter
Preface

"The purpose of the Workshop is to assess the status and needs of the Damping Rings for the era of PEP-II. The goal is to have the Rings perform to produce the specified beam parameters with an insignificant amount of downtime. We want to achieve this status by improving the Rings where necessary, not by increasing the maintenance effort. The things that we can act upon in the immediate future are largely engineering issues to improve the integrated availability of the damping rings.

"However, we are also looking for ways of improving the beam quality, the machine tunability and beam diagnostics and instrumentation. Some of these issues might be motivated by studies into future linear collider issues, or they may be pre-emptive for PEP-II future requirements for a higher brightness injector. In either case, we would like to gather all suggestions for improved performance and operation."

The statement above was distributed in the first announcement for the Workshop. The response of the SLAC staff is heartening as is documented in these proceedings. The proceedings are organized as close as possible in the order of the original Workshop Schedule which was divided into five sessions: reliability issues, operations, beam dynamics, rf systems, and diagnostics. In most cases only transparencies are available for a given presentation, but where possible an abstract or summary has been added. Each session is also summarized. The Appendix giving the beam requirements shows not only the requirements for PEP-II as discussed in the Workshop introduction, but also for two approved experiments that will require use of the Rings. These requirements are for the most part less stringent than the SLC requirements, which are given for comparison.

It is expected that these proceedings will now provide a valuable resource for planning future modifications—both to the equipment and to the operating parameters—to the Rings in the spirit of the purpose and goals stated above.

The Workshop was held in the nearby Santa Cruz Mountains in the Boulevard Restaurant that for these two days was made available for our exclusive use. The large picture windows of the restaurant look east through the redwoods, into the Stanford hills, and on to the San Francisco Bay beyond, resulting in both a scene of beauty and a sense of isolation—an excellent setting for a workshop of this type as evidenced by both the quantity of presentations and their individual quality.

We would like to thank each of the speakers and session chairpersons for providing their transparencies and summaries or in some cases formal manuscripts. We also want to thank the staff of the Boulevard Restaurant for their assistance throughout and for the excellent lunches and snacks that were prepared.

The Workshop was sponsored by the SLAC Accelerator Department.

Workshop Organizers:

P. Krejcik
J. Clendenin
# DR2000 Workshop

**SLAC Damping Rings in the 21st Century**

April 6-7, 1998 at the Boulevard, Woodside

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<td><strong>IV. RF Systems</strong> - J. Frisch</td>
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<td>1. Spear experience - J. Corbett</td>
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<td>Lunch</td>
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<td>1. Low energy operation - T. Raubenheimer</td>
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<td>2. Implementation of low energy lattice - M. Woodley</td>
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<td>1. Review of beam size monitors -</td>
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<td>2. Inj. and Ext. energy spread and</td>
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