

CONTENTS

OPENING REMARKS — L. A. Berry and N. A. Uckan	vii
1. SUMMARY OF THE WORKSHOP — N. A. Uckan, W. B. Ard, C. L. Hedrick, G. R. Haste, A. Favale, G. E. Guest, H. Ikegami, and R. A. Dandl	1
2. OVERVIEW	29
REVIEW OF RING EXPERIMENTS — R. A. Dandl	31
CHARACTERISTICS OF HOT ELECTRONS IN A SIMPLE MAGNETIC MIRROR FIELD — H. Ikegami and M. Hosokawa	59
REVIEW OF EBT ELECTRON RING STABILITY — D. A. Spong	75
A BRIEF REVIEW OF ELMO RING STABILITY THEORY — G. E. Guest	97
3. EXPERIMENTS	121
THE RING FORMATION IN NAGOYA BUMPY TORUS — M. Fujiwara, M. Hosokawa, H. Iguchi, T. Shoji, M. Tanaka, and H. Ikegami	123
DIAMAGNETIC MEASUREMENTS FOR EXPERIMENTAL DETERMINATION OF EBT RING PARAMETERS — K. H. Carpenter	143
COMPARISONS OF ENERGETIC ELECTRON FORMATION IN EBT AND IN MINIMUM-B CONFIGURATIONS — G. R. Haste	163
4. RING/CORE MODELING	173
HOT ELECTRON RING EQUILIBRIA AND EFFECTS ON EBT TRANSPORT — L. W. Owen, C. L. Hedrick, and E. F. Jaeger	175
NUMERICAL CALCULATION OF THE ELECTRON DISTRIBUTION FUNCTION FOR EBT RING ELECTRONS — J. Tolliver, E. F. Jaeger, and C. L. Hedrick	193
A MODEL KINETIC EQUATION FOR ELECTRON CYCLOTRON HEATING OF EBT RINGS — D. C. Baxter and I. B. Bernstein	221
A MODEL FOR ELECTRON RING FORMATION IN EBT — S. Hamasaki, H. H. Klein, N. A. Krall, J. B. McBride, and J. L. Sperling	233
ANISOTROPY OF THE EBT RING ELECTRONS — A. H. Boozer	253
5. MICROWAVE HEATING AND RADIATION	259
MICROWAVE HEATING OF THE ANNULUS IN EBT — D. B. Batchelor	261
MICROWAVE INTERACTION WITH HOT ELECTRON PLASMAS — M. Tanaka, M. Fujiwara, and H. Ikegami	289
SYNCHROTRON RADIATION FROM THE RING AND NONLINEAR EFFECTS IN MICROWAVE HEATING OF EBT — V. K. Tripathi, E. Ott, and C. S. Liu	305

6.	POWER BALANCE	317
	RING POWER BALANCE — S. K. Borowski, N. A. Uckan, E. F. Jaeger, and T. Kammash	319
	ANNULUS POWER LOSSES IN EBT — R. J. Kashuba and W. B. Ard	333
	OPTIMIZATION OF EBT ANNULUS POWER DRAIN WITH RESPECT TO CORE PROPERTIES — M. C. Vella	349
	STEADY-STATE MICROWAVE POWER REQUIREMENTS FOR EBTR ELECTRON RINGS — A. Andrade, R. A. Krakowski, and C. G. Bathke	363
7.	STABILITY	381
	FLUTE-INTERCHANGE STABILITY IN A HOT ELECTRON PLASMA — R. R. Dominguez	383
	MACROSCOPIC STABILITY OF THE HOT ELECTRON ANNULUS IN EBT — R. L. Miller, R. R. Dominguez, G. E. Guest, and T. Okhawa	409
	A TWO-POINT MODEL FOR ELECTRON TRANSPORT IN EBT — S. C. Chiu and G. E. Guest	437
	STABILITY OF A TOROIDAL PLASMA BY HOT ELECTRON ANNULUS IN A BUMPY TORUS — H. Sanuki and M. Fujiwara	453
	STABILITY ANALYSIS OF A HOT ELECTRON EBT PLASMA — J. W. Van Dam and Y. C. Lee	471
8.	OPEN SESSION DISCUSSIONS	491
	8.1 INSTABILITIES IN HOT ELECTRON PLASMAS	493
	SUMMARY OF THE OPEN SESSION — M. C. Vella	495
	INSTABILITIES IN MIRROR CONFINED HOT ELECTRON PLASMAS — W. B. Ard	499
	8.2 POWER BALANCE IMPLICATIONS FOR A REACTOR	503
	SUMMARY OF THE OPEN SESSION — W. B. Ard	505
	RING POWER BALANCE IMPLICATIONS FOR A REACTOR — N. A. Uckan	507
	8.3 DIAGNOSTICS	525
	SUMMARY OF THE OPEN SESSION — G. R. Haste	527
	MEASUREMENTS OF THE STORED RING ENERGY IN EBT-I — R. J. Colchin	529
	AUTHOR INDEX	533
	ATTENDANCE LIST	535
	AGENDA	539