

ANNUAL REPORT  
OF THE  
MICHIGAN STATE UNIVERSITY  
CYCLOTRON LABORATORY  
FOR THE PERIOD  
JULY 1, 1979 TO JUNE 30, 1980

By  
PROJECT STAFF

✓  
DECEMBER 1980  
EAST LANSING, MICHIGAN

## Preface

This issue of our annual report covers activities during the period July 1, 1979 to June 30, 1980. This was a time of transition and rapid change, the first year of the National Superconducting Cyclotron Laboratory. The 50 MeV cyclotron was shut down July 22, 1979 in a fitting way for a university laboratory, after an all night run by a student finishing his thesis. Almost immediately the clearing away of the beam lines, magnets and shielding walls began. Their new configuration as a temporary set up for the Phase I (K-500 MeV) cyclotron is described in this report.

The 50 MeV cyclotron was known for its ability to produce large amounts of high quality data. In this report you can see that the nuclear physics interest of these data is continuing. Most of the research section of the report is based on the analysis of these data, and there is certainly going to be some in next year's report also. The rise in the number of publications this year is related to the shutting down of the cyclotron, as the physicists are also in a transition period between cyclotrons. Staff from MSU were also active in experiments at Indiana, Berkeley, Chalk River, Argonne, Berlin, Brookhaven, Saccary, and Orsay during this year, and this activity is also reported.

The two new cyclotrons, the NSF funded K-500 and the DOE funded K-800, are in very different stages of development, as is also described in the report. The K-500 construction

is moving smoothly, and the K-800 is in the design stage accompanied by the procurement of major long lead-time items. A source of continuing drama during the entire year was the DOE funding for this year's work on the K-800. In the end, after many cuts and partial restoration of cuts, enough funds were appropriated to start construction of the new building and to continue the design and procurement at a reduced rate. During the year we learned a lot about how the U.S. government and its various agencies operate.

During the coming year the laboratory will become more and more national in character. A user's group has been formed (contact the chairman of its executive committee, J. Saladin, U. of Pittsburgh, for information), and a program advisory committee will soon be created. We encourage the readers of this report to submit proposals. A mailing and notices in the various newsletters and publications will announce the deadline and format for these proposals.

As in the past, we solicit advice and suggestions from you not only on the contents of our annual report but also on what we are doing to create a facility suitable and convenient for outside users to do first rate nuclear physics research.

Walter Benenson  
Associate Director

Table I. Scientific staff of the MSU Cyclotron Laboratory for the period July 1, 1979-June 30, 1980 and their principal sources of support.

Faculty	supported by	present address	Faculty (continued)	supported by	present address
N. Anantaraman	NSF-exp,MSU		R.G.H. Robertson	NSF-exp,MSU	
Richard Au	NSF-exp,MSU		Reginald Ronningen	NSF-exp,MSU	
Sam M. Austin	NSF-exp,MSU	U. of Milan	Surender Saini	NSF-exp,MSU	
Giovanni Bellomo	NSF-exp,MSU		David K. Scott	NSF-exp,MSU	
Walter Benenson	NSF-exp,MSU		Fred Serr	NSF-theory	M.I.T.
Fred M. Bernthal	on leave	APS Fellow, Wash, D.C.	Wim Sterrenburg	NSF-exp	Amsterdam
George F. Bertsch	NSF-theory, MSU		Guenter Stark	NSF-exp,MSU	
Norman Bird	NSF-exp,MSU		Lawrence Tharp	NSF-exp,MSU	
Henry G. Blosser	NSF-exp,MSU		Bernard Waldman	NSF-exp,MSU	
Richard Blue	NSF-exp,MSU		Phillip Walker	NSF-exp	
Hans Guenter Bock	NSF-exp,MSU		B.H. Wildenthal	NSF-exp,MSU	Daresbury, England
Jerzy Borysowicz	NSF-exp,MSU		John Yurkon	NSF-exp,MSU	
Paul Brinda	NSF-exp,MSU		A.F. Zeller	NSF-exp,MSU	
Lisa J. Brown	NSF-exp,MSU				
Mao-Bai Chen	NSF-exp,MSU	Shanghai Inst of Nuc Res			
Gerard M. Crawley	NSF-exp,MSU		<u>Graduate Students</u>		
Marcello Distasio	NSF-exp,MSU		Tim Antaya	NSF-exp	
Peggy Dyer	NSF-exp,MSU		Rahmat Aryaeinejad	NSF-exp	Iran
Elsa Fabrici	NSF-exp,MSU	U. of Milan	Terry Awes	NSF-exp	
Scott Francis	NSF-exp,MSU		Kevin Beard	NSF-exp	
Aaron I. Galonsky	NSF-exp,MSU		Wayne Bentley	NSF-exp	
Claus-Konrad Gelbke	NSF-exp,MSU		Jim Carr	NSF-exp	
Morton M. Gordon	NSF-exp,MSU		Jose Carvalho	NSF-exp	
Robert Gress	NSF-exp,MSU		Don-Bok Cha	NSF-theory	
Hiroji Hanawa	NSF-exp,MSU		Lin-Wen Chien	NSF	
William Harder	NSF-exp,MSU		Mark Curtin	NSF-exp	
Leigh Harwood	NSF-exp,MSU		Paul Deason	NSF-exp	
Patrick Hecking	NSF-exp,MSU		Mark Hart	NSF-exp	
Harold Hilbert	NSF-theory,MSU		Bruce Hasselquist	NSF-exp	
Harold Hilbert	NSF-exp,MSU		Jung Kim	NSF-theory	
Jack Jenkins	NSF-exp,MSU		Arno Ledebuhr	NSF-exp	
David Johnson	NSF-exp,MSU		Nubuo Matsushita	NSF-Chem	
William Johnson	NSF-exp,MSU		Robert Melin	NSF-exp	
Jirohta Kasagi	NSF-exp,MSU		Dave Munding	NSF-theory	
Edwin Kashy	NSF-exp,MSU		Janaki Narayanaswamy	NSF-exp	Bell Labs, Murray Hill, NJ LLL, Livermore, CA
Wm. H. Kelly	NSF-exp,MSU		Tom Nees	NSF-exp	
Jack Kitsmiller	NSF-exp,MSU	Montana State University	Eric Ormand	NSF-exp	G.M., Three Rivers, MI
John Kuchar	NSF-exp,MSU		Lawrence Robinson	NSF-exp	
Helmut Laumer	NSF-exp,MSU		Haitook Sarafian	NSF-exp	
Donald Lawton	NSF-exp,MSU				
Donato Magistro	NSF-exp,MSU				
Merrit Mallory	NSF-exp,MSU				
Felix Marti	NSF-exp,MSU				
Wm. C. McHarris	NSF-exp,MSU				
Hugh McManus	NSF-theory,MSU				
Norval Mercer	NSF-exp,MSU				
Peter Miller	NSF-exp,MSU				
Toshi Miyanaga	NSF-exp,MSU				
Jerry A. Nolen, Jr.	NSF-exp,MSU				
Bill Nurnberger	NSF-exp,MSU				
David Poe	NSF-exp,MSU				
Giacomo Poggi	NSF-exp,MSU				
Francesco Resmini	NSF-exp,MSU				
Dan O. Riska	NSF-theory,MSU	U. of Milan			

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