PS/AA/BA/afm 2 December 1982

AA LONG TERM NOTE No. 25

Summary of the meeting of November 30, 1982

Present : B. Autin, V. Chohan, S.X. Fang, Y. Fedotov, R. Garoby, W. Hardt, K. Hollingworth, C. Johnson, E. Jones, H. Koziol, G. Nassibian, F. Pedersen, L. Rinolfi, K.H. Schindl, G. Schneider, R. Sherwood, C. Taylor, A. Tollestrup, S. van der Meer, E.J.N. Wilson

Topics : - Antiprotons at UNK, by Y. Fedotov
- Preparation of AC Study

1. Antiprotons at UNK

The UNK complex of Serpukhov will consist of three accelerators.

- Stage 1 : Accelerator from 70 to 600 GeV or storage ring at 400 GeV with conventional magnets. The machine will be a booster at 400 GeV for the superconducting accelerator.
- Stage 2 : 400-3000 GeV superconducting accelerator or storage ring at 3000 GeV.
- Stage 3 : Second storage ring at 3000 GeV for p-p or p-$\bar{p}$ collisions.

The basic structure of UNK is a FODO cell of 91 m length and 82.5° phase advance. The machine comprises 160 cells and 6 long straight sections (fig. 1). Sections 1 and 4 are 800 m long and are used for extraction, beam dump, injection, halo scraping and RF cavities. Sections 2, 3, 5 and 6 are 500 m long and will be used for beam-beam collisions.

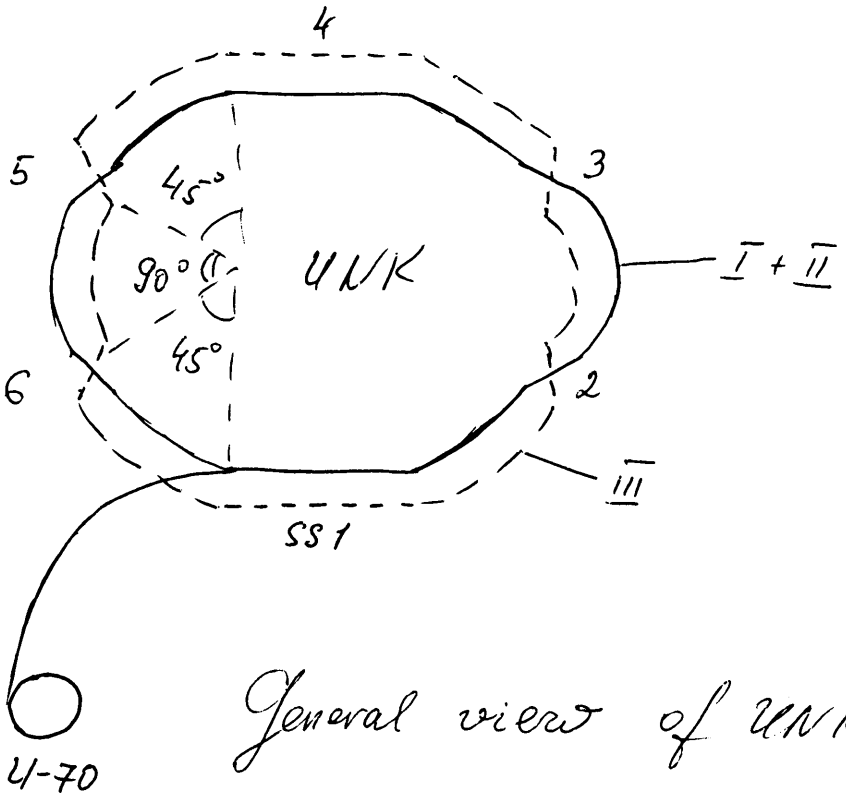
1 m long superconducting dipoles were made for testing the design principles and the field quality. Two full scale dipoles (5 T, 6 m) have been built , they reached 5.2 and 5.8 tesla after a short training ($\sim$ 3 quenches). Civil engineering for two access pits will start next year and the first stage is expected to be concluded in 1990.

2. Preparation of AC Study

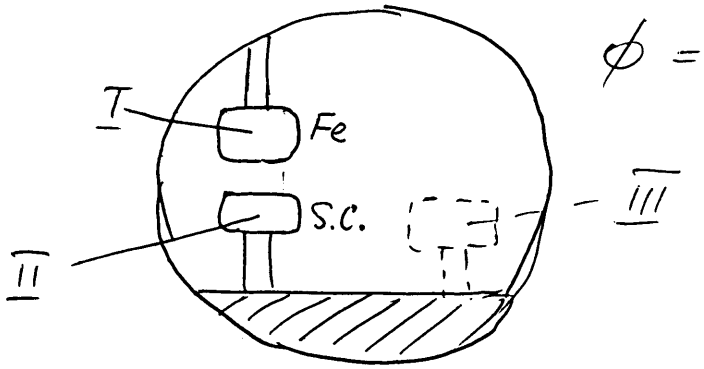
Attached is a schedule of the study.

B. Autin

(1)



General view of UNK



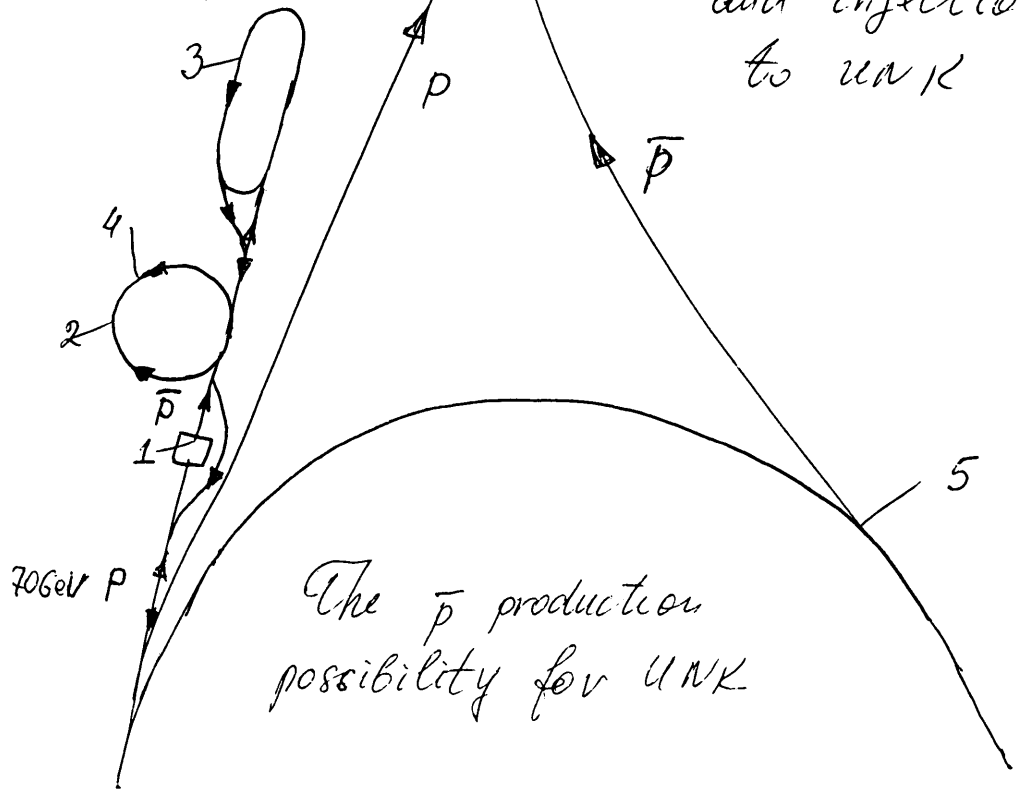
$\phi = 5$ m

Accelerator's disposition in the UNK tunnel

(2)

1. $\bar{p}$ production target 5.5GeV
2. $\bar{p}$ deceleration and precooling up to 400MeV
3. $\bar{p}$ storage and cooling
4. $\bar{p}$ cooled and stored acceleration up to 4.7GeV

5 $\bar{p}$ acceleration up to 70GeV and injection to UNK



The $\bar{p}$ production possibility for UNK

ANTIPROTON COLLECTOR STUDY

PS AUDITORIUM

Agenda

MONDAY, DECEMBER 13, 1982

08 h 45		Welcome, B. Autin	
08 h 50		Introduction, E. Jones	
		I Session : Motivation for an Antiproton Collector near the PS.	
		Chairman : E. Jones	
09 h 05	1	Physics goals in p-$\bar{p}$ high energy collisions,	C. RUBBIA
09 h 30	2	Physics at LEAR with a high antiproton flux,	K. KILIAN
09 h 55	3	SPS luminosity in the collider mode,	J. GAREYTE
10 h 20		- - - - - - - - Coffee Break - - - - - - - -	
10 h 45	4	General ideas on new accumulation schemes for antiprotons,	S. VAN DER MEER
11 h 15	5	Antiproton production,	C.D. JOHNSON
11 h 40	6	Antiproton collection,	E. JONES, R. SHERWOOD, J.C. SCHNURIGER, P. SIEVERS
		II Session : Beam Optics and Magnets.	
		Chairman : E.J.N. Wilson	
14 h 00	7	General characteristics of the lattice,	B. AUTIN
14 h 20	8	Dispersion suppression,	J.P. DELAHAYE
14 h 35	9	Lattice structure with fixed and variable η,	S.X. FANG
15 h 00	10	η variations with a single extra-current,	W. HARDT
15 h 20	11	Magnets,	L. RINOLFI, H.H. UMSTÄTTER
		- - - - - - - - - Tea Break - - - - - - - - -	
16 h 00	12	Injection,	S. MAURY, R. SHERWOOD
16 h 25	13	Radiation problems,	A. SULLIVAN
16 h 50	14	Siting the Antiproton Collector,	K.H. REICH
		- - - - - - - - - Apéritif - - - - - - - - -	

TUESDAY, DECEMBER 14, 1982

III Session : Stochastic Cooling

Chairman : A. Tollestrup

09 h 00	*15*	Fast betatron cooling,	B. AUTIN
09 h 30	*16*	Pick-up electrodes and kickers with variable gap,	S. MILNER, A. PONCET
09 h 50	*17*	Fast momentum cooling,	S. VAN DER MEER
		- - - - - - - - Coffee Break - - - - - - - -	
10 h 45	*18*	Tubes à onde progressive à large bande et puissance élevée	Mr. GUIDEE (Thomson CSF)
11 h 15	*19*	Limitations on slot and loop structures,	L. FALTIN, K. HOLLINGWORTH, C. TAYLOR

IV Session : RF

Chairman : C. Taylor

11 h 45	*20*	A scheme for doubling PS bunch intensity,	G. NASSIBIAN
		- -	
14 h 00	*21*	Bunch length and beam intensity in the PS,	R. GAROBY
14 h 30	*22*	Bunch rotation in the Antiproton Collector,	H. KOZIOL
15 h 00	*23*	Bunch rotation with η-change,	W. HARDT
15 h 20	*24*	RF cavity,	W. PIRKL
		- - - - - - - - - Tea Break - - - - - - - - - -	
16 h 00	*25*	Synthesis of the study,	B. AUTIN