Introduction to Accelerator Physics

Granada

October 28 to November 9 2012

Generalities

- Welcome!

- All lectures in Aula Magna
- Coffee, tea and poster session outside Aula Magna
- Lunch back at the hotel

- Secretariat about 50m away from Aula Magna
- Computers available in Biblioteca for web, email
- Study rooms available (Sala de Estudio 1 and 2)

- Handouts provided each morning outside Aula Magna
- Please, please, please give us feedback on the lectures

- WiFi in the university
  - Network: cviugr
  - username: iap@invitados.ugr.es
  - password: CERN++UGR

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PROGRAMME FOR INTRODUCTION TO ACCELERATOR PHYSICS
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Time	Sunday 28 Oct	Monday 29 October	Tuesday 30 October	Wednesday 31 October	Thursday 1 November	Friday 2 November	Saturday 3 November	Sunday 4 Nov	Monday 5 November	Tuesday 6 November	Wednesday 7 November	Thursday 8 November	Friday 9 Nov
09.30	ARRIVAL DAY	Opening Talks	Transverse Dynamics II	Transverse Dynamics IV	RF Systems I	RF Systems II	Transfer Lines	EXCURSION	Synchrotron Radiation	Multi-Particle Effects II	Synchrotron Light Machines	Particle Sources	DEPARTURE DAY
10.30			B. Holzer	B. Holzer	E. Jensen	E. Jensen	M. Meddahi		L. Rivkin	D. Brandt	A. Muller	D. Faircloth	
10.30		Introduction to Accelerators I	GS1 Relativity	T1 Relativity	GS3 Longitudinal Dynamics	T2 Transverse Dynamics	T3 Longitudinal Dynamics		Power Converters	GS4 Electron Dynamics	T4 Electron Dynamics	FELs	
11.30		P. Bryant							F. Bordry			A. Muller	
		COFFEE	**COFFEE**	**COFFEE**	**COFFEE**	**COFFEE**	**COFFEE**		**COFFEE**	**COFFEE**	**COFFEE**	**COFFEE**	
12.00		Relativity	Longitudinal Beam Dynamics I	Private Study	Linear Imperfections & Resonances II	Beam Instrumentation I	Linear Accelerators I		Electron Beam Dynamics I	Colliding Beam Physics	FFAGs	Vacuum Systems	
13.00		C. Prior	F. Tecker		O. Bruning	U. Raich	M. Vretenar		L. Rivkin	W. Herr	S. Machida	J. Jimenez	
		LUNCH	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**		**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**	
15.30		E.M. Theory	Transverse Dynamics III	Longitudinal Beam Dynamics III	FREE AFTERNOON	Injection & Extraction	Linear Accelerators II		Electron Beam Dynamics II	FREE AFTERNOON	Warm Magnets	Cyclotrons	
16.30		C. Prior	B. Holzer	F. Tecker		M. Meddahi	M. Vretenar		L. Rivkin		N. Marks	M. Seidel	
16:30		Introduction to Accelerators II	Longitudinal Beam Dynamics II	GS2 Transverse Dynamics		Beam Instrumentation II	Poster Session		Multi-Particle Effects I		SC Magnets	Putting It All Together	
17.30		P. Bryant	F. Tecker			U. Raich			D. Brandt		L. Bottura	W. Herr	
		TEA	**TEA**	**TEA**		**TEA**	**TEA**		**TEA**		**TEA**	**TEA**	
18.00		Transverse Dynamics I	Private Study	Linear Imperfections & Resonances I		**Seminar** Accelerator Development in Spain	Private Study		**Seminar** LHC for Pedestrians		Radiation and Radio-protection	**Seminar**	
19.00		B. Holzer		O. Bruning		F. Toral			P. Lebrun		D. Kiselev	R. Heuer	
20.00	Buffet Dinner	Welcome Drink/Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	Special Dinner	

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11.30		P. Bryant							F. Bordry			A. Muller	
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		LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH		LUNCH	LUNCH	LUNCH	LUNCH	
15.30		E.M. Theory	Transverse Dynamics III	Longitudinal Beam Dynamics III		Injection & Extraction	Linear Accelerators II		Electron Beam Dynamics II		Warm Magnets	Cyclotrons	
16.30		C. Prior	B. Holzer	F. Tecker		M. Meddahi	M. Vretenar		L. Rivkin		N. Marks	M. Seidel	
16:30		Introduction to Accelerators II	Longitudinal Beam Dynamics II	GS2 Transverse Dynamics		Beam Instrumentation II	Poster Session		Multi-Particle Effects I		SC Magnets	Putting It All Together	
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ARRIVAL DAY

FREE AFTERNOON

EXCURSION

FREE AFTERNOON

DEPARTURE DAY

Tutorials

- Exercises set by the 4 lecturers mentioned
  - Guided Study session for each, in Aula Magna
  - Tutorial for each in 4 roughly equal groups
    - TG1 Aula Seminario (second floor) Surnames A to F
    - TG2 Aula 24 (second floor) Surnames G to K
    - TG3 Aula 25 (second floor) Surnames L to P
    - TG4 Aula Magna Surnames Q to Z

Tutorial	TG4	TG3	TG2	TG1
T1 Relativity	Aula Magna C. Prior	Aula 25 P. Bryant	Aula 24 W. Herr	Aula Seminario B. Holzer
T2 Trans. Dynamics	Aula Magna B. Holzer	Aula 25 W. Herr	Aula 24 O. Bruning	Aula Seminario P. Bryant
T3 Long. Dynamics	Aula Magna F. Tecker	Aula Magna F. Tecker	Aula 24 E. Jensen	Aula Seminario W. Herr
T4 Elect. Dynamics	Aula Magna M. Siedel	Aula 25 W. Herr	Aula 24 A. Wolski	Aula Seminario D. Brandt

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Excursion

- Sunday November 4, all day
  - Departs 09.00 sharp (bus from 08.30)
  - Visit the Nerja caves from 11.00
  - Lunch on the coast from 13.30
  - Return journey departs 17.30
  - Dinner at the hotel as usual
- We have reserved for everyone !
  - We need to know if you will come or not
  - Please tell Barbara YES or NO by Tuesday evening

Free afternoons

- They are exactly that
- If you want to go to the Alhambra, pre-book
- If you decide not to take dinner at the hotel (after a free afternoon or otherwise) please let Barbara know the day before so that we can inform the hotel

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15.30		E.M. Theory	Transverse Dynamics III	Longitudinal Beam Dynamics III		Injection &	Linear	S	Electron		Warm Magnets	Cyclotrons	
16.30	D	C. Prior	B. Holzer	F. Tecker							Marks	M. Seidel	
16:30	A	Introduction to	Longitudinal Beam	GS2 Transverse							Magnets	Putting It All Together	
17						U. Raich			D. Brandt		L. Bottura	W. Herr	
						TEA	TEA		TEA		TEA	TEA	
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ARRIVAL DAY

FREE AFTERNOON

EXCURSIONS

DEPARTURE DAY

Photo at 13.00
Place?

Seminar by the CERN DG
Start at 19.00
Parque de las Ciencias (30 minute walk)
Dinner at Panoramic 360 (near to above)

Short presentation on oPAC
Oliver Bruning

Seminar by CERN DG and special dinner

- Seminar at 19.00 to allow 30mins to walk there
  - Parque de les Ciencias
  - http://www.parqueciencias.com/parqueciencias/

- Special dinner nearby afterwards
  - Restaurante 360
  - http://www.panoramic360.es/

- Maps ?