



Norway and CERN



Strong involvement in the ATLAS and ALICE experiments

ALICE:

- ✦ University of Bergen
- ✦ Bergen University College
- ✦ University of Oslo



ATLAS:

- ✦ University of Bergen
- ✦ University of Oslo

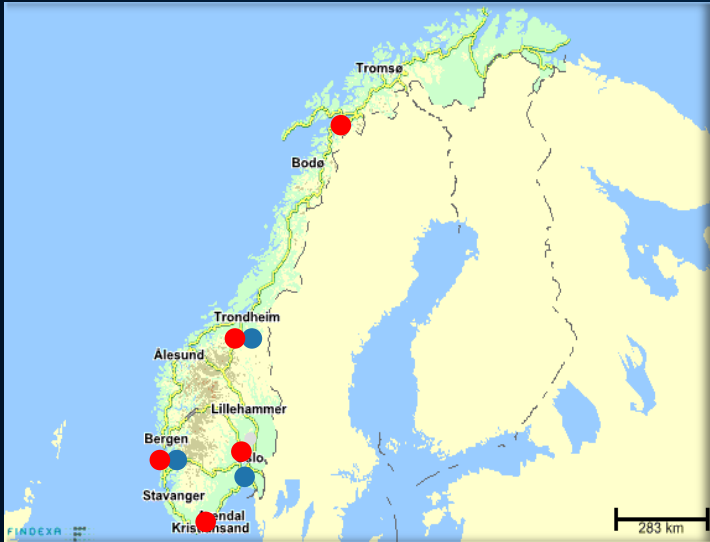


+ participation in smaller projects (CLIC, ISOLDE, AEGIS, NA61)





High Energy Physics in Norway



Blue: Oslo, Bergen, Trondheim:
Universities (offering everything up through PhD)

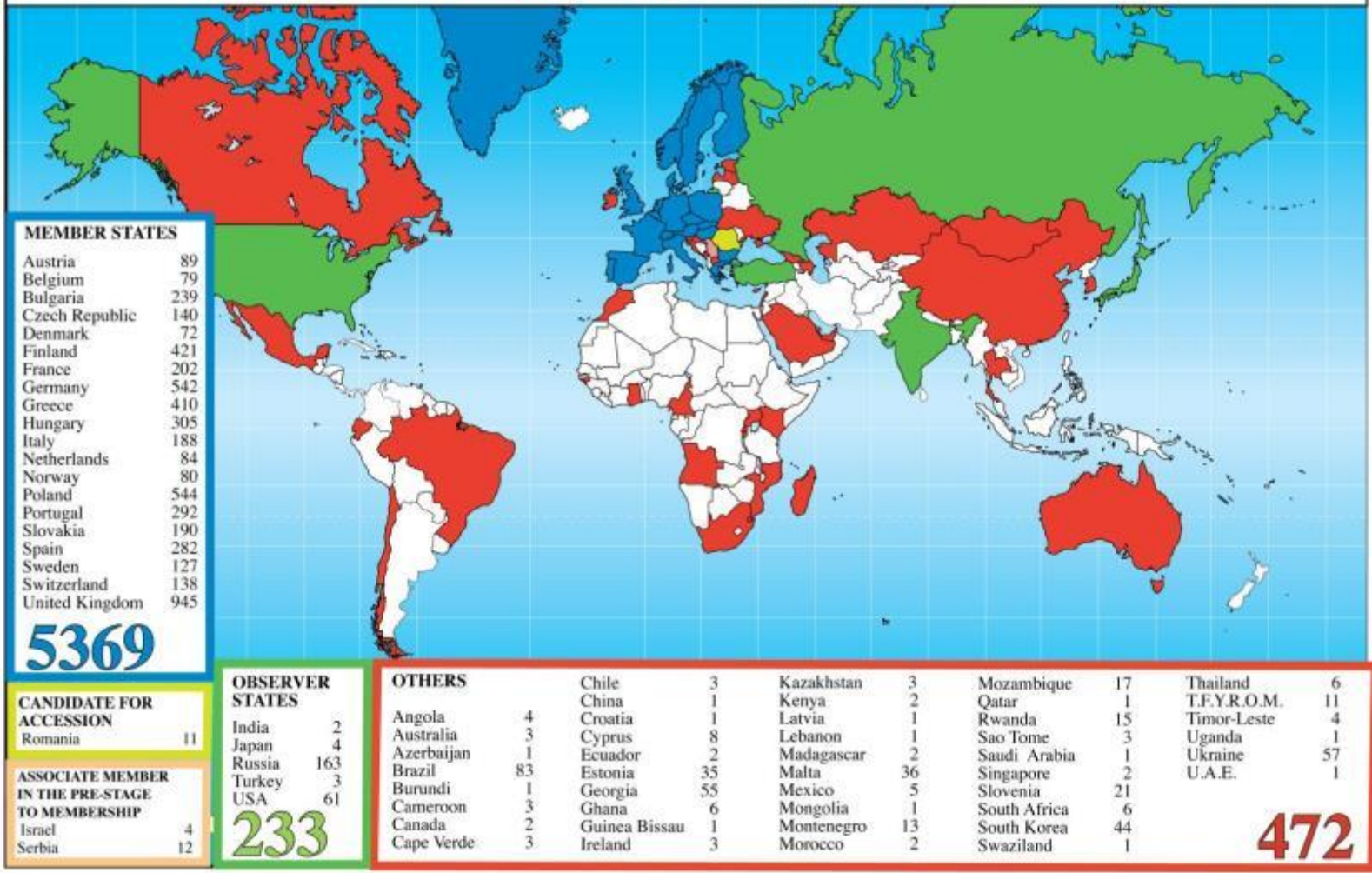
Red: University Colleges currently involved at CERN (offering up through master level) – some becoming Universities (soon). Some also involved in the ATLAS/ALICE experiments. Supply, with NTNU, all technical students at master level (10-15 yearly)

Today around 140 Norwegian researchers, engineers, postdocs (15-20), PhD students (20-25) and master students (20-25) are involved in the CERN activities:

- At CERN: Around 15-20 technical students at CERN in addition to the Norwegian staff (10-15 at master and ~5 ph.d level)
- Around 90 Norwegian researchers (of all categories above) are registered as users travelling frequently to CERN
- The rest travelling are less frequently or working in Norway within the CERN related research programmes

CERN Teacher Programme

Teacher Programme Participants 1998 - 2012



The Norwegian Physics Teachers schools at CERN are set-up by the Association for Norwegian Physics Teachers (a very active organization), which is also a subgroup of the Norwegian Physical Society (making sure education is a key issue also for that level) – see information on the right

Norwegian CERN physicists take a major part of the lectures, and Mick and co pull it all together with some key non-Norwegian speakers and a social programme

CERN school frequency limited by availability of funding for the teachers (which they arrange in various ways)

Norsk fysikklærerforening

Styret

Morten Trudeberg, Asker vgs (leder)
Astrid Johansen, Adolf Øien vgs
Janne Christine Fossum, UMB
Trond Harkjerr, Lillehammer vgs
Cathrine Wahlstrøm Tellefsen, Valler vgs
Carl Angell, UiO (Generalsekretær)

Møter

Landskonferanse om fysikkundervisning blir i 2012 holdt på Gol fra 7. til 10. august. Mer informasjon om møtet kan finnes [her](#) eller på foreningens [hjemmeside](#). Frist for påmelding: 1. juni.

Medlemmer

Norsk fysikklærerforening har 494 medlemmer og 71 subsidiære medlemmer.

Aktivitet

Norsk fysikklærerforening (NFL) er en delvis autonom forening med egne vedtekter og eget regnskap, men foreningen har også status som en undergruppe av NFS. Omlag 400 av NFS sine medlemmer er også medlemmer av NFL. Foreningen er åpen for alle som underviser i fysikk og for alle som har interesse for formidling av fysikk. Hovedandelen av medlemmene underviser i fysikk i den videregående skolen.

NFL arbeider for å fremme faglig og pedagogisk utvikling innen norsk fysikkundervisning. Dette gjør vi ved å:

- arrangere Landskonferansen for fysikkundervisning annethvert år. I de siste årene har dette vært en integrert del av det såkalte Fysikermøtet.
- bistå ved arrangement av regionsvise samlinger for fysikklærere.
- skaffe til veie midler til og muligheter for faglig etterutdanning for lærere, både gjennom Landskonferansen og andre tilbud.
- skaffe til veie og systematisere informasjon om fysikkfagets stilling i den videregående skolen.
- koordinere fagpolitiske aktiviteter blant medlemmene. Vi har blant annet vært en innflytelsesrik aktør i arbeidet med den nye læreplanen i fysikkfaget i den videregående skolen.
- ha et formelt nasjonalt ansvar for gjennomføringen av Fysikk OL.



Foreningen har et eget nettsted hvor du finner mer informasjon: <http://fysikklarer.no>



Description Sponsored by the Norwegian Centre for Science Education, the Norwegian Physics Teachers Society and the University of Oslo**Support** Email: mick.storr@cern.ch

Go to day ▾









Sunday, 13 March 2011

- 16:00 - 19:00 Welcome and Site Orientation 3h0' (Restaurant 1) ▾
 Speakers: Mick Storr (CERN), Terrence Baine (University of Oslo)
 Material: [A 50 Year Journey to the Heart of Matter](#)  [The LHC Rap](#) 
[The Large Hadron Collider in 10'](#) 
- 19:00 - 20:00 Dinner 1h0' (Restaurant 1) ▾

Monday, 14 March 2011

- 09:00 - 10:00 Welcome and Introduction to CERN 1h0' ▾
 Speaker: Steinar Stapnes (CERN)
 Material: [Slides](#)  
- 10:30 - 11:00 Introduction to the programme 30' ▾
 Speaker: Mick Storr (CERN)
 Material: [Slides](#)  
- 11:30 - 12:15 Introduction to ATLAS 45' ▾
 Speaker: Heidi Sandaker (University of Bergen)
- 12:30 - 14:00 Lunch (Restaurant 1)
- 14:00 - 17:00 Visit to ATLAS, Globe and Microcosm 3h0' (Meet at CERN Reception, Bldg. 33) ▾
 Speakers: Liv Wiik (Albert-Ludwigs-Universitaet Freiburg), Heidi Sandaker (University of Bergen)
- 17:00 - 18:30 Review of the day 1h30' (Restaurant 1) ▾

Tuesday, 15 March 2011

- 09:00 - 09:45 Particle Physics and Cosmology (1/3) 45' ▾
 Speaker: Bjarne Stugu (Department of Physics & Technology - University of Bergen)
 Material: [Slides](#)  
- 10:30 - 11:15 Particle Physics and Cosmology (2/3) 45' ▾
 Speaker: Bjarne Stugu (Department of Physics & Technology - University of Bergen)
 Material: [Slides](#)  
- 11:30 - 12:15 Detectors for Particle Physics 45' ▾
 Speaker: Ole Rohne (University of Oslo)
 Material: [Slides](#) 
- 12:30 - 14:00 Lunch (Restaurant 1)
- 14:00 - 15:00 Visit to SM-18 1h0' (Meet at CERN Reception, Bldg. 33) ▾
 Speaker: Mick Storr (CERN)
- 15:00 - 17:00 Parallel Session : Build a Cloud Chamber, Visit to PS, LINAC and LEIR 2h0' (6-2-004) ▾
 Speakers: Martin Hawner, Mick Storr (CERN)
 Material: [Alternative apparatus](#)   [Cloud Chamber Workshop](#) 







First school in 2007, next in March 2011, next Sept/October this year, see agenda example from previous school including Norwegian CERN physicists as lecturers (either CERN staff or University staff coming down for the occasion)

Additional effect:






Many school classes visit CERN (1100 pupils in 2012), on initiative by these teachers or other teachers in the Association for Physics Teachers

All of the teachers are informed about the CERN schools and possibilities for visiting, and many come back year after year with their classes. In periods we have daily visits.



Wednesday, 16 March 2011

09:00 - 09:45	Particle Physics and Cosmology (3/3) 45' Speaker: Bjarne Stugu (Department of Physics & Technology - University of Bergen) Material: Slides  	<input checked="" type="checkbox"/>
10:30 - 11:00	Norway at CERN 30' Speaker: Steinar Stapnes (CERN) Material: Slides  	<input checked="" type="checkbox"/>
11:15 - 12:00	Introduction to Accelerators 45' Speaker: Steinar Stapnes (CERN) Material: Slides  	<input checked="" type="checkbox"/>
12:00 - 12:30	Q/A session 30' Speakers: Steinar Stapnes (CERN), Bjarne Stugu (Department of Physics & Technology-University of Bergen)	<input checked="" type="checkbox"/>
12:30 - 14:00	Lunch (Restaurant 1)	
14:00 - 19:30	Discover Geneva Treasure Hunt 5h30' (Restaurant 1) Speaker: Mick Storr (CERN)	<input checked="" type="checkbox"/>
19:30 - 22:00	Programme Dinner 2h30' (Hotel Edelweiss (Geneva)) Hotel Edelweiss 2, Place de la Navigation	<input checked="" type="checkbox"/>

Thursday, 17 March 2011

09:00 - 09:45	Introduction to ALICE and Heavy Ion Physics 45' (30-7-018 - Kjell Johnsen Auditorium) Speaker: Joakim Nyststrand (Department of Physics & Technology-University of Bergen) Material: Slides 	<input checked="" type="checkbox"/>
10:30 - 11:15	GRID Computing 45' (30-7-018 - Kjell Johnsen Auditorium) Speaker: Nils Hoimyr (CERN) Material: Slides 	<input checked="" type="checkbox"/>
11:30 - 12:15	Antimatter and the Antiproton Decelerator 45' (30-7-018 - Kjell Johnsen Auditorium) Speaker: Rolf Landua (CERN) Material: Slides   Video 	<input checked="" type="checkbox"/>
12:00 - 14:00	Lunch (Restaurant 2)	
14:00 - 16:30	Parallel session : Visit Antimatter Factory and CERN Computer Centre 2h30' (Meet at Restaurant 2) Speakers: Nils Hoimyr (CERN), Erik Hidle (NTNU)	<input checked="" type="checkbox"/>
17:00 - 18:00	Gauguin's Questions in Particle Physics 1h0' (60-6-015) Speaker: John Ellis (CERN)	<input checked="" type="checkbox"/>

Friday, 18 March 2011

09:00 - 10:30	Masterclasses in Norway 1h30' (40-S2-B01 - Salle Bohr) Speaker: Katarina Pajchel (University of Oslo) Material: Slides  document 	<input checked="" type="checkbox"/>
11:00 - 11:45	Medical Applications of Particle Physics 45' (40-S2-B01 - Salle Bohr) Speaker: Manjit Dosanjh (CERN) Material: Slides 	<input checked="" type="checkbox"/>
12:00 - 14:00	Lunch (Restaurant 1)	
14:00 - 17:00	Visit to LHC Control Centre and CMS 3h0' (Meet at CERN Reception, Bldg. 33) Speaker: Lasse Normann (CERN)	<input checked="" type="checkbox"/>



Summary

- Norwegian teacher schools take place roughly every 2 years, limited by funding
- Norwegian researchers at CERN have important roles in making sure the programme is set up and make key presentations
- The Norwegian Physics teachers are very well organized, very active and the programme is well known among them (close to 500 members of their association)
- In addition there are many pupils coming to CERN as a result of this programme and the fact that visit-possibilities are well advertised among the physics teachers