

FIRST STABLE ISOTOPE COURSES AT THE EBD

A. LABORATORY INFORMATION MANAGEMENT SYSTEM (LIMS)

Wednesday, 01/Oct

20.00-23.00	Social event: Guided visit to Santa Cruz Quarter
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Thursday, 02/Oct

9:00-9:30	Registration
9:30-11:00	LIMS for Laser (Leonard Wassenaar) Whole day content: <ul style="list-style-type: none">➢ LIMS installation and being familiar to use it.➢ LIMS for off-axis (OA-ICOS) and cavity ring-down (CRDS) laser absorption spectrometers (LAS) for $\delta^2\text{H}$ and $\delta^{18}\text{O}$ measurements of liquid water.
11:00-11:30	Coffee break
11:30-13:30	LIMS for Laser (Leonard Wassenaar)
13:30-15:00	Lunch break
15:00-17:00	LIMS for Laser (Leonard Wassenaar)

Friday, 03/Oct

9:30-11:00	LIMS for Light Stable Isotopes (Ricardo Alvarez Alonso), In Spanish with English assistance) Whole day content: <ul style="list-style-type: none">➢ ISODAT work-sheet configuration being compatible with LIMS➢ LIMS for results obtained with Thermo instrument (ISODAT software)
11:00-11:30	Coffee break
11:30-13:30	LIMS for Light Stable Isotopes (Ricardo Alvarez Alonso)
13:30-15:00	Lunch break
15:00-17:00	LIMS for Light Stable Isotopes (Ricardo Alvarez Alonso)



B. STABLE ISOTOPES IN ECOLOGY AND ENVIRONMENTAL SCIENCES

Monday, 06/Oct

9:00-9:30	Registration
9:30-11:00	Stable isotope Biochemistry and Ecology (Keith A. Hobson) General historical overview and introduction to the light stable isotopes (C,N,O,H,S) in Nature
11:00-11:30	Coffee break
11:30-13:30	Stable isotope Biochemistry and Ecology (Keith A. Hobson)
13:30-14:30	Lunch break
14:30-18:30	Practical session Assistant will be divided in two different groups; each activity will last for two hours: a) Visit to the laboratory of stable isotopes, some practical class (Ricardo Alvarez Alonso, Susana Carrasco) b) Introduction to ArcGis to analyse spatial stable isotope data (Isabel Afán Asencio y Francisco Ramírez Benítez)

Tuesday, 07/Oct

9:30-11:00	<u>Isotopes in the Hydrosphere: rivers, lakes, groundwater, processes</u> (Gabriel Bowen) Whole morning content: Variation in the isotope ratio of waters, Rayleigh Distillation, Global Meteoric Water line, Pale climate reconstructions
11:00-11:30	Coffee break
11:30-13:30	<u>Isotopes in the Hydrosphere: rivers, lakes, groundwater, processes</u> (Gabriel Bowen)
13:30-15:00	Lunch break
15:00-18:00	Practical session: Applications to studies on water dynamic and quality, using your own data (Gabriel Bowen)

Wednesday, 08/Oct

9:30-11:00	<u>Isotopes in the Biosphere</u> (Keith A.Hobson/Brice Semmens) Morning content: Plant fixation of elements, trophic effects and diet-tissue isotopic discrimination factors, wildlife applications (diet), metabolic routing.
11:00-11:30	Coffee break
11:30-13:00	<u>Isotopes in the Biosphere</u> (Keith A.Hobson/Brice Semmens)
13:00-14:00	<u>Fundamentals of isotope ratios in mass spectrometry</u> (Lionel Mounier)
14:00-15:00	Lunch break
15:00-18:00	Mixing models, Trophic niche calculations, Bayesian approaches in diet studies (Brice Semmens)
20.30	<i>Musical concert and cocktail</i>

Thursday, 09/Oct

9:30-11:00	Linking Isotopes in the atmosphere and Hydrosphere with the Biosphere (Keith A. Hobson) Whole morning content: Atmosphere/Hydrosphere connections and Isoscapes. Wildlife applications of Isoscapes
11:00-11:30	Coffee break
11:30-13:30	Linking Isotopes in the atmosphere and Hydrosphere with the Biosphere (Keith A. Hobson)
13:30-15:00	Lunch break
15:00-18:00	Keith A. Hobson / Gabriel Bowen Isoscapes, GIS approaches, Assignment models (including IsoMap), Statistical considerations

Friday, 10/Oct

8:00-18:00	<i>Field trip to Doñana National Park</i>
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