

MARTEDI' 16 MAGGIO 2017

AULA 21

IL LABORATORIO DI SCIENZE MATEMATICHE E L'UNITA' DI
RICERCA INdAM DELLA UNINT ORGANIZZANO

**DIFFERENTIAL GEOMETRY
AFTERNOON**

15:00 "ON BI-HERMITIAN SURFACES"

MASSIMILIANO PONTECORVO (UNIVERSITA' ROMATRE)

16:30 COFFEE BREAK

**17:00 "GERMS OF FIBRATIONS OF SPHERES BY GREAT
CIRCLES ALWAYS EXTEND TO THE WHOLE SPHERE"**

HERMAN GLUCK (UNIVERSITY OF PENNSYLVANIA)

ABSTRACTS

ON BI-HERMITIAN SURFACES

We present an overview of results giving a satisfactory classification of compact bi-Hermitian surfaces (S, J_{\pm}) . That is to say compact complex surfaces (S, J_+) admitting a Hermitian metric g and a different complex structure J_- which is also g -Hermitian.

GERMS OF FIBRATIONS OF SPHERES BY GREAT CIRCLES ALWAYS EXTEND TO THE WHOLE SPHERE

We will prove that every germ of a smooth fibration of an odd-dimensional round sphere by great circles extends to such a fibration of the entire sphere, a result previously known only in dimension three.

In doing so, we will see a connection between this result and one of the most desirable unsolved problems in the subject, namely to prove that the space of all smooth great circle fibrations of an odd-dimensional sphere deformation retracts to its subspace of Hopf fibrations, again known only in dimension three. We will prove an infinitesimal version of this unsolved problem, and then see how it leads to the germ extension result.

We will also say a few words about how the study of fibrations of round spheres by great subspheres is related to the (only partially solved) Blaschke Problem in differential geometry in the large, which seeks to characterize the simplest spaces by the global behavior of their geodesics.

This is joint work with **Patricia Cahn** and **Haggai Nuchi**.