TITLES and ABSTRACTS

Benoit Daniel (Université Paris-Est Créteil)
Title: Half-space theorems in homogeneous manifolds
Abstract: We prove some half-space theorems for minimal surfaces in the Heisenberg group $Nil(3)$ and the Lie group $Sol(3)$. This is joint work with W. Meeks and H. Rosenberg.

Laurent Hauswirth (Université de Marne-la-Vallée)
Title: Deformation of flat minimal surfaces in $\mathbb{S}^2 \times \mathbb{R}$ and $S(3)$
Abstract: We will compare deformation property of flat cylinders preserving Alexandrov embeddedness in $\mathbb{S}^2 \times \mathbb{R}$ and $S(3)$. We will explain why the Clifford torus is isolated and the reason of existence of two parameter family of Riemann's examples in $\mathbb{S}^2 \times \mathbb{R}$.

Hojoo Lee (Seoul National University)
Title: Introduction to the dual Jacobi operator in product space $\mathcal{M}_\kappa \times \mathbb{R}$
Abstract: The goal of this talk is to introduce a new Schrödinger operator on minimal surfaces in Riemannian product space $\mathcal{M}_\kappa \times \mathbb{R}$. This new operator can be viewed as a natural dual of the second variation operator. After introducing dual Shiffman functions, which in fact lie in the kernel of our new operator, the classification of minimal surfaces with vanishing dual Shiffman function will be obtained.

William Meeks (University of Massachusetts)
Title: Constant mean curvature surfaces in homogeneous 3-manifolds
Abstract: I will cover some of my recent work with Mira, Perez and Ros on this subject. Possible topics include the classification of the moduli space of H-spheres in these spaces, CMC foliations and the solution of the CMC flux conjecture and an overview of the outstanding problems in this subject.

Sung-Hong Min (Seoul National University)
Title: On minimal surfaces bounded by a piecewise geodesic Jordan curve with 5 vertices
Abstract: Let Γ_5 be a piecewise geodesic Jordan curve with 5 vertices in $\mathbb{R}^n$ or $\mathbb{H}^n$. Then any minimal surface Σ bounded by Γ_5 is embedded. If Γ_5 is in a geodesic ball of radius $\frac{\pi}{4}$ in $\mathbb{S}^n$, then $\Sigma \subset \mathbb{S}^n$ is also embedded. As a consequence, Γ_5 is an unknot in $\mathbb{R}^3, \mathbb{H}^3$ and $\mathbb{S}^3$.

Filippo Morabito (Université de Tours)
Title: On a family of complete embedded minimal surfaces in $\mathbb{R}^3$ with infinitely many horizontal planar ends
Abstract: We construct by using the technique of opening of nodes of a Riemann surface with nodes a 1-parameter family of minimal surfaces of infinite genus having infinitely many horizontal planar ends. An example in this family can be thought as a collection of infinitely many planes with a finite number of catenoidal necks between each pair of adjacent planes.

Sungho Park (Hankuk University of Foreign Studies)
Title: Minimal annuli touching spheres
Abstract: We show that every compact embedded minimal annulus meeting two spheres of same radius tangentially is part of a catenoid.

Juncheol Pyo (KIAS)
Title: Capillary minimal annuli
Abstract: We first show that an immersed minimal annulus, with two planar boundary curves along which the surface meets these planes with constant contact angle, is part of the catenoid. Second, we prove that an embedded minimal annulus, which lies between two different concentric spheres and meets spheres perpendicularly along its boundaries, is part of a plane.

Keomkyo Seo (Sookmyung Women's University)
Title: Rigidity of complete minimal submanifolds in hyperbolic space
Abstract: We study the nonexistence of L^2 harmonic 1-forms and topological property on minimal submanifolds in hyperbolic space. Furthermore we estimate a first eigenvalue for the Laplacian operator on minimal submanifolds in hyperbolic space.

Marc Soret (Université de Tours)
Title: Kapouleas-Yang minimal surfaces in $\mathbb{S}^3$ and beyond
Abstract: N. Kapouleas and S.D. Yang constructed a family of compact minimal surfaces M_m of genus m for m sufficiently large and embedded in the spherical space $\mathbb{S}^3$. We show that there is an N' such that for all $m > N'$, the first nontrivial eigenvalue of the Laplacian on $M_m, m > N'$ is two.

Giuseppe Tinaglia (King's College London)
Title: The geometry of constant mean curvature surfaces embedded in $\mathbb{R}^3$
Abstract: In this talk I will discuss recent results on the geometry of constant mean curvature ($H \neq 0$) surfaces embedded in $\mathbb{R}^3$. Among other things I will prove a radius and curvature estimates for simply connected, constant mean curvature surfaces embedded in $\mathbb{R}^3$. It follows from the radius estimate that the only complete constant mean curvature disk embedded in $\mathbb{R}^3$ is the round sphere. This is joint work with Bill Meeks.

Jaigyoung Choe (KIAS)
Title: Density of a minimal submanifold and total curvature of its boundary
Abstract: We show that given an $(n-1)$-dimensional submanifold Γ of $\mathbb{R}^m$ the total absolute curvature of Γ equals the average over all n-planes $\mathbb{R}^n \subset \mathbb{R}^m$ of the total Gauss-Kronecker curvature of the projection of Γ onto the $\mathbb{R}^n$. Also we prove that given two n-planes R_1, R_2 in $\mathbb{R}^m$ and two compact convex hypersurfaces Γ_i of $R_i, i = 1, 2$, a minimal submanifold spanned by $\Gamma := \Gamma_1 \cup \Gamma_2$ is either flat or nonflat and embedded.