VI International Meeting on Lorentzian Geometry Granada (Spain), September 6-9, 2011 GELOGRA 2011 Plenary Talk: New examples of maximal surfaces in Lorentz Minkowski 3-Space.

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Maximal surfaces in Lorentz Minkowski 3-space arise as solutions of the variational problem of locally maximizing the area among spacelike surfaces. By definition, they have everywhere vanishing mean curvature. Like the case of minimal surfaces in Euclidean 3-space, maximal surfaces possess a Weierstrass-type representation formula.

The most significant difference between minimal and maximal surfaces is the fact that the only complete spacelike maximal surfaces are planes. However, if we allow some sorts of singular points for maximal surfaces, the situation changes. The authors showed that if admissible singular points are included, then there is an interesting class of objects called "maxfaces", and introduced notions of completeness and weak completeness.

In this talk, we shall survey the theory of maxfaces, and shall introduce several new examples.

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