The geometry of embedded pseudo-Riemannian surfaces in terms of Poisson brackets

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Arnlind, Hoppe and Huisken showed how to express the Gauss and mean curvature of a surface embedded in a Riemannian manifold in terms of Poisson brackets of the embedding coordinates. We generalize these expressions to the pseudo-Riemannian setting and derive explicit formulas for the case of surfaces embedded in $\R^m$ with indefinite metric.

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