Title: The amalgamatic curvature and the orthocurvatures of three dimensional hypersurfaces in the Euclidean space

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The amalgamatic curvature $A(p)$ is a natural geometric quantity whose construction parallels that of classical scalar curvature. Its role in a ladder of curvatures corresponds to the role of harmonic mean in the classical ladder of power means, i.e. to the mean of power -1. In the present work we determine lower and upper bounds for the range of the absolute mean curvature in function of the amalgamatic curvature. Then, we introduce the orthocurvatures of a three-dimensional hypersurface in Euclidean ambient space and study several inequalities for some of these new curvature invariants.

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