# 3D Torso Surface Curvatures as It Relates to Clothing Design

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From the position of pattern making, we searched for the relation between plane development and 3D torso surface curvature by examining angle at concentrated vertices. This method will be referred to as the 'Angle at vertex method'. The body forms of 110 young women at the age of 20.1 were recorded with a 3D digitizer, and simulated by a triangulated polyhedron. Each concentrated Angle 0 at the vertex was calculated for either internal Coucentrated Gaussian Curvature(2x-0), or boundary line(N.L, A.L, W.L) Concentrated Geodesic Curvature (x-0). The total of Concentrated Sum of Gaussian Curvature and Geodesic Curvature for each model was x. A pattern of angular conservation was established, in accordance with Gauss-Bonnet theorem. On a macro level, we evaluated the distribution of curvature and general featurcs of curvature for each model. On a micro level, we examined the regional characteristics in terms of sum positive values and sum negative values independently for both curvatures types, using the simulated Standard Model. The areas of the bust and shoulder will be difficult to construct from plan due to the positive and negative Gaussian Curvatures. Geodesic Curvature is concave around the neck-base line and armscye line, and the waist line is almost straight when translated to plan. The curyatures of every point on the Standard Model were color displayed, making it a highly informative tool for understanding the torso surface form.