

Errata for Gortler chapter 22

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Gortler's book presents subdivision surfaces in a manner that is a bit obtuse, so I actually recommend the presentation on Wikipedia, at least as an alternative.

Furthermore, Gortler presents a somewhat different algorithm than the one originally presented by Catmull and Clark. It's still a subdivision algorithm, and it still does the job of smoothing out angular models, but it's not the Catmull-Clark algorithm, and it converges to a slightly different limit surface.

To accurately describe the Catmull-Clark algorithm as presented in the original publication and other sources (including Wikipedia), equations 22.2 and 22.3 in Gortler should be changed to read as follows. The difference is subtle, but important.

$$v_v = \frac{n_v - 3}{n_v} v + \frac{2}{n_v^2} \sum_j v_j + \frac{1}{n_v^2} \sum_j v_{f_j} \quad (22.2)$$

$$v_v = \frac{1}{4} v + \frac{1}{8} \sum_j v_j + \frac{1}{16} \sum_j v_{f_j} \quad (22.3)$$