Claims:

1. A method for coarse pixel shading (CPS) comprising:

pre-processing a graphics mesh by creating a tangent-plane parameterization of desired vertex attributes, wherein the tangent-plane parameterization includes:

for each vertex of the graphics mesh,

collecting neighboring triangles sharing the vertex, and

iterating over the neighboring triangles and projecting them into a same tangent plane, wherein the projection includes obtaining first-order derivatives at the vertex using a triangle at the tangent plane;

performing rasterization of the graphic mesh in a rasterization stage of a graphics pipeline using the tangent-plane parameterization; and

displaying resulting pixels from the rasterization to a display device.

2. The method as in claim 1 wherein pre-processing the graphics mesh further comprises:

setting up and averaging linear attribute equations for each vertex.

3. The method as in claim 2 wherein performing rasterization further comprises:

setting up plane equations in a vertex shader.

4. The method as in claim 3 wherein the plane equations comprise per-vertex tangent plane equations.

5. The method as in claim 4 wherein performing rasterization further comprises:

making the plane equations visible to a pixel shader without interpolation.

6. The method as in claim 5 wherein performing rasterization further comprises:

determining by the pixel shader modified texture derivatives based on a plurality of vertex tangent planes.

7. The method as in claim 6 wherein the pixel shader further interpolates results using barycentric coordinates.

8. A non-transitory machine-readable medium for coarse pixel shading (CPS) having program code stored thereon which, when executed by a machine, causes the machine to perform the operations of:

pre-processing a graphics mesh by creating a tangent-plane parameterization of desired vertex attributes, wherein the tangent-plane parameterization includes:

for each vertex of the graphics mesh,

collecting neighboring triangles sharing the vertex, and

iterating over the neighboring triangles and projecting them into a same tangent plane, wherein the projection includes obtaining first-order derivatives at the vertex using a triangle at the tangent plane;

performing rasterization of the graphics mesh in a rasterization stage of a graphics pipeline using the tangent-plane parameterization; and

displaying resulting pixels from the rasterization to a display device.

9. The machine-readable medium as in claim 8 wherein pre-processing the graphics mesh further comprises:

setting up and averaging linear attribute equations for each vertex.

10. The machine-readable medium as in claim 9 wherein performing rasterization further comprises:

setting up plane equations in a vertex shader.

11. The machine-readable medium as in claim 10 wherein the plane equations comprise per-vertex tangent plane equations.

12. The machine-readable medium as in claim 11 wherein performing rasterization further comprises:

making the plane equations visible to a pixel shader without interpolation.

13. The machine-readable medium as in claim 12 wherein performing rasterization further comprises:

determining by a pixel shader modified texture derivatives based on a plurality of vertex tangent planes.

14. The machine-readable medium as in claim 13 wherein the pixel shader further interpolates results using barycentric coordinates.

15. An apparatus for coarse pixel shading (CPS) comprising:

preprocessing logic to pre-process a graphics mesh prior to rasterization by creating a tangent-plane parameterization of desired vertex attributes, wherein the tangent-plane parameterization includes:

for each vertex of the graphics mesh,

collecting neighboring triangles sharing the vertex, and

iterating over the neighboring triangles and projecting them into a same tangent plane, wherein the projection includes obtaining first-order derivatives at the vertex using a triangle at the tangent plane;

a rasterization stage of a graphics pipeline to perform rasterization of the graphics mesh using the tangent-plane parameterization; and

a display device to display resulting pixels from the rasterization.

16. The apparatus as in claim 15 wherein pre-processing the graphics mesh further comprises:

setting up and averaging linear attribute equations for each vertex.

17. The apparatus as in claim 16 wherein the rasterization stage comprises:

a vertex shader to set up plane equations.

18. The apparatus as in claim 17 wherein the plane equations comprise per-vertex tangent plane equations.

19. The apparatus as in claim 18 wherein the rasterization stage comprises:

a geometry shader to make the plane equations visible to a pixel shader without interpolation.

20. The apparatus as in claim 19 wherein the rasterization stage further comprises:

the pixel shader to determine modified texture derivatives based on a plurality of vertex tangent planes.

21. The apparatus as in claim 20 wherein the pixel shader further interpolates results using barycentric coordinates.