achiving g2 continuity, but zebras don't match?
Послан mongodrome - 18.06.2012 04:21

Hi, I'm new to this forum.
I have a problem with a blending surface (or more of a filleting problem). I want to blend the shoulder and rear deck surface of car into the side surface and rear surface. But everytime I try I end up with a green curvature continuity sign between the blend surfaces but the diagnostic shades do not match up. it doesn't make a difference if i choose G1, G2 or G3. I always end up with the same problem. I tried it with trimming the surface edges with the fillet tool, with trim convert or with extending the surface backwards. i tried building the surface with skin than aligning, fillets, rail surface, square, blend surface and profile blend. And everytime, on atleast one surface boarder between the blends ends up with a sharp edge although the program tell my i achieved g2 (continuity check end curvature plot). Does anybody have any solutions to this problem? Thanks.

http://www.kodg-3d.com/images/fbfiles/images/probl01.jpg

http://www.kodg-3d.com/images/fbfiles/files/probl.rar

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achiving g2 continuity, but zebras don't match?
Послан kodg - 18.06.2012 15:14

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this is because you are building a blend that is not a real intersection of the surfaces, that's where it should be a blend.
http://www.kodg-3d.com/images/fbfiles/files/probl01.rar
http://www.kodg-3d.com/images/fbfiles/images/trueintersection.jpg

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Re:achiving g2 continuity, but zebras don't match?
Послан mongodrome - 18.06.2012 15:43

Ok thanks, so that basically means that I have to remodel the lower surface, so it intersects completely with the shoulder/rear deck surface right?

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Re:achiving g2 continuity, but zebras don't match?
Послан mongodrome - 05.08.2012 22:09

I hava another question. I will ask in this thread so I do not have to start a new one for it.
How do I model spherical surfaces to class a standard? Like a whole sphere or the tip of a plane or a f1 car while maintaining curvature continuity with the other surfaces. I tried moving the cv's of a plane and trimming the plane. but I do not get a surface with an even curvature. If I build a blend surface between

the trimmed plane and the other surface I can get curvature continuity but, but if I take a blend curve and revolve it, I do not even get positional on the trimmed plane. so the trimmed plane doesn't have a spherical shape, more of a ellipsoidal. Any suggestions? How do you model spherical to class a standard.
http://www.kodg-3d.com/images/fbfiles/files/test.rar

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Re:achiving g2 continuity, but zebras don't match?
Послан alias_instructor - 28.11.2012 23:48

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hey mongodrome - i hope im not too late with an answer)

You use a right method. But there are a few tricks. First of all the size of that "cap" surface need to be around 1mm or less in real life scale. After that - you need to modify a plane or another 2x2 degree surface with transform cv NUV with high sensitivity. check the surface with eval tools (curvature evaluation principal min and max with "use bands" checkbox or with x sections evaluation graphs). Try to achieve even "spherical" curvature distribution on that surface. Trim it with outer surfaces borders. After that - scale it (!) in a side view non-proportionally to match a curvature of the outer surfaces. May be you will need several iterations to achive a perfect match. Thats it) I will attach an example here.
http://www.kodg-3d.com/images/fbfiles/files/sphere_with_good_curvature_distribution.zip

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Re:achiving g2 continuity, but zebras don't match?
Послан mongodrome - 29.11.2012 14:01

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Thanks.
I came up with this solution by myself. I draw a 6 degree circle and cut it in the middle. then I build a revolve surface along z axis. i trim a rectangle out of the sphere surface on the top and bottom and build blend surfaces across, with I trim convert an realign. Is this an acceptable solution?? Or should I use the one with the plane, which would need fewer surfaces.
http://www.kodg-3d.com/images/fbfiles/files/sphere.rar

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Re:achiving g2 continuity, but zebras don't match?
Послан alias_instructor - 29.11.2012 21:17

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Its better to trim the round cap not the revolve surfaces. If you have revolve axis exactly on a curve EP - you will have a pole with degenerate points. First row of hull will have CVs positioned very close to each other in zero position. The trick is to start a revolve curve a little bit later and to feel that round gap with something trimmed around for a round shape. Like that you will have a _natural_ patch edge for your round gap, not a trimmed one.

You can try one more thing. Create a revolve with 4 segment surfaces - and build a cross curves for your "cap surface". Sort of intersecting cross-sections. Align it to your neighboring revolved surfaces and build

a surfaces from this "cross" with rail 1 1 parallel degree 3x3 or 2x2. Trim it. And in ideal worlds it should work. You will have a matching cap surface without additional CV adjusting. I hope)

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