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Chapter 9

1 message

Izzet Coskun <coskunizzet@gmail.com> Fri, Nov 17, 2023 at 6:46 PM
To: Joe Harris <harris@math.harvard.edu>, David Eisenbud <de@berkeley.edu>

Dear Joe and David,

Sure, I will stop pointing out the black boxes. Those are easy to spot anyway.
Here are some thoughts on Chapter 9. This is my favorite chapter of the book so far.

Best, Izzet

page 180, line 2. `if this condition seems somewhat, well, strange ...', I would remove somewhat and well. `If this condition seems strange, ...'

page 181, line 20, definition of the incidence correspondence I, in should be \in

page 182, line 3, I think you need a space between n \heq 4. and We

page 182, line 3, do you want the image of C to be called C'? (i.e., the image C' of C?)

page 182, last line, it may be better to display the definition of M

page 183, line 4 of 9.2.1, are you off by 1 in your RR theorem? Should it be
g= d+1 - h^0 + h^1?

page 183, line 6 of 9.2.1, should it be Castelnuovo's solution is `to' derive

page 184, 2 lines above 9.2.3, you have a broken reference Lemma ??

page 185, line -6, for sufficiently large m, O_C(M+m) `is' nonspecial

page 185, line -2,-3, better to use \left(\right)

page 186, line 1, I would add `In case of equality,' to show C is ACM ...

page 186, line 6 omitting the diagram, you are missing a period before `Thus the middle row..'

page 186, line -8, display the inequality dim V_k - dim V_{k-1} \geq ...
and you are missing a parenthesis in h^0(O_C(k-1))

page 186, line -2, you are missing (parentheses in h^0(O_C(m)) and h^0(O_C(m-1))

page 188, proof of Corollary 9.2.6, you might want to say a few more words here. Do you want parentheses H^0(O_C(n))?

Cheerful Fact 9.2.7 has broken references
Also, isn't there a sequence of inequalities (and a Hartshorne Conjecture) here for curves that lie on a surface of degree d but no smaller surface?

This is a general comment about the secant lines. Throughout the book, you use \overline{p,q} to denote the line spanned by p and q. Wouldn't it look nicer if you omit the comma and write \overline{pq}?

page 189, line 7, better to write `general (n-4)-plane ..' (parentheses around n-4)

page 189, line 9, again (n-4)-plane

page 189, line 20, better to say `only a finite number of secant lines contain \Lambda' (no will)

page 189, line 22, better to say `the image curve has at most double points..'

page 189, line 24, `each double point consists of..'

Was there a reason to put Marten's Theorem in Chapter 4? Why couldn't it be in Chapter 9 when you are ready to prove it?

page 191, line -2 of 3rd bullet point of the proof of 9.3.5, an extra we, it should be `for general D, there are only ...'

page 192, line 5, (g-3)-plane

page 192, line 9, it should be `C_{g-2} x C to Pic_{g+2}(C)' instead of C_g-2

page 193, exercise 9.4.4. Is r=n in this exercise? You sometimes have A^r or P^r and sometimes have A^n or P^n.

page 194, exercise 9.4.6, Should P^r be P^d?