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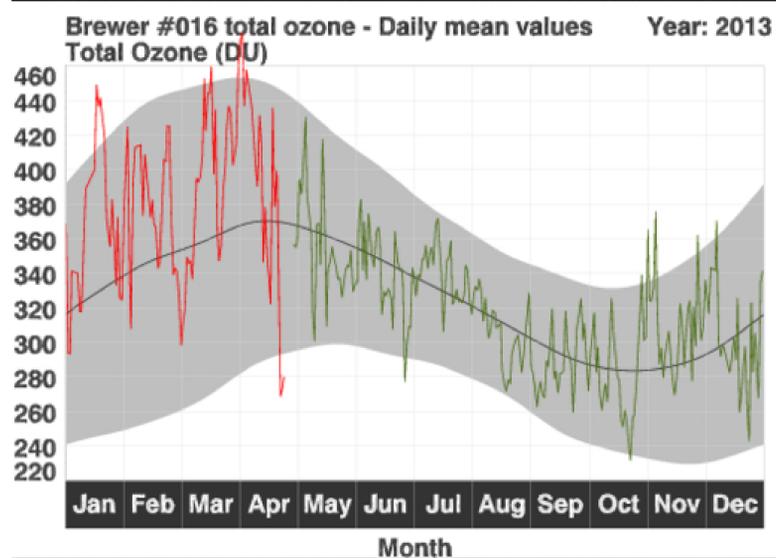
UVB increase by ozone layer thinning

We measured at meteoLCD a spectacular decrease of the thickness of the ozone layer between the 22 and 23 April 2013, from 382 wdown to 266 DU in one day! As expected, the UVB irradiance (and the UVI) jumped by quite a lot. I wrote a small [paper](#) on this phenomen, and used the occasion to compute the important Radiation Amplification Factor (RAF), probably the first such calculation done here in Luxembourg. The result is: $RAF \sim 1.1$, i.e. close to 1.

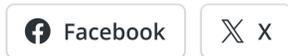
So a quick answer to the question: "by how much will the UVI increase if the total ozone column drops from highTOC to lowTOC is to apply a multiplier highTOC/lowTOC.

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Here a picture of the measurements at Uccle showing the TOC plunge:



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2 Responses to "UVB increase by ozone layer thinning"

RAF revisited (total ozone column and UVI) | meteoLCD Weblog Says:
March 8, 2014 at 19:07 | Reply

[...] In April 2013 I used a period where total ozone column (TOC) made a spectacular plunge to calculate the RAF (Radiation Amplification Factor) which tells us by how much the UVI (or biologically effective UVB) will increase when the total ozone column becomes smaller. This month (March 2014) we had a relatively low TOC of 276.5 DU the 7th March, followed the next day by a DU of 328.1. Sky conditions, total solar irradiance and solar angle were practically the same, so that TOC is the only factor influencing UVI. The calculation gives an $RAF = 1.17$, similar to the value found last year. Broadly speaking, if TC diminishes by 20%, UVI increases by 20% (here -18.7% for DU and +18.2% for UVI). [...]

First Radiation Amplification factor for 2016 | meteoLCD Weblog Says:
April 21, 2016 at 14:36 | Reply

[...] several previous posts (here and here) I commented on the RAF (Radiation Amplification Factor) which tells us how much a change in the [...]

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