Narelle Sargent

From: Erwin Hartog van Banda | DGMR <HA@DGMR.NL>
Sent: Tuesday, 17 March 2020 8:12 PM
To: Christopher Marsh
Subject: RE: Concawe meteo in iNoise

Hi Christopher,

Last week I attended a workshop from the Institute of Acoustics in the UK regarding the future of road and railway noise modelling in the UK. The question put was if CRN and CRTN need to be replaced. The general mood was that the Harmonoise method would be a method to look at in that case. And I fully agree with that. So that would be an exciting development. The Harmonoise method is a more theoretical and more accurate method compared to the more empirical ISO 9613 and Concawe methods. Harmonoise also includes an advanced meteorological model.

We at DGMR have been heavily involved in the development of the Harmonoise method within the European working groups. As you might know it was a political decision to stop development of Harmonoise and use the NMPB-2008 method as basis for CNOSSOS.

Here are the answers to your questions.

Q: Do you have any validation studies undertaken for using CONCAWE met with ISO9613?
A: ISO 9613 and Concawe are developed and validated independent of each other and to my knowledge mixing them has not been validated. We added the K4 option of Concawe to our ISO 9613 implementation in Predictor/iNoise software years ago simply on request of users in Australia. There are 5 methods in iNoise/Predictor to calculate the Cmet. Concawe is one of them. It is up to the user which method to use. The K4 value can be positive and negative. For category 1 K4 is positive up to about 9 dB. This means up to 9 dB lower levels then ISO downwind. For Category 5/6 K4 is negative up to -3 dB. This means up to 3 dB higher noise levels then the ISO downwind level.

Q: If you use D class with no wind, does that mean that the propagation is as per ISO9613 (moderate downwind/temperature inversion) or does iNoise make an adjustment to simulate calm conditions (calm winds and stability class D)?
A: We did not change the propagation in ISO 9613. So yes, with D class and no wind it means category 4 and K4 will be 0. The propagation is downwind according to ISO 9613 .

Q: Does using CONCAWE met with ISO9613 always generate noise levels higher than just using ISO9613, or does iNoise make any additional adjustments?
A: No, K4 can be positive and negative. For category 5/6 K4 is negative up to -3 dB. See the figure below. iNoise/Predictor does not make any additional adjustments.

Q: If you use iNoise with Pasquil-Stability class does iNoise still conform to the ISO17534 for implementing ISO9613?
A: Yes, The ISO propagation stays unchanged. Also ISO 17534-3 does not handle meteo effects. All test models in ISO 17534-3 are done with Cmet=0.

Note: In iNoise/Predictor we calculate K4 independent of frequency. See the figure below.

Kind regards,

S.E. (Erwin) Hartog van Banda BSc
Product manager iNoise, Predictor and NoiseAtWork

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From: Christopher Marsh <Christopher.Marsh@epa.nsw.gov.au>
Sent: zondag 15 maart 2020 22:11
To: Erwin Hartog van Banda | DGMR <HA@DGMR.NL>
Subject: RE: Concawe meteo in iNoise

Hi Erwin,

Thanks for getting back to me. I am interested in how adding CONCAWE meteorological factors to ISO9613 affects the uncertainty in the calculation. I have some further questions:
Do you have any validation studies undertaken for using CONCAWE met with ISO9613?
If you use D class with no wind, does that mean that the propagation is as per ISO9613 (moderate downwind/temperature inversion) or does iNoise make an adjustment to simulate calm conditions (calm winds and stability class D)?
Does using CONCAWE met with ISO9613 always generate noise levels higher than just using ISO9613, or does iNoise make any additional adjustments?
If you use iNoise with Pasquil-Stability class does iNoise still conform to the ISO17534 for implementing ISO9613?

Thanks for your assistance on this.

Many thanks,
Chris

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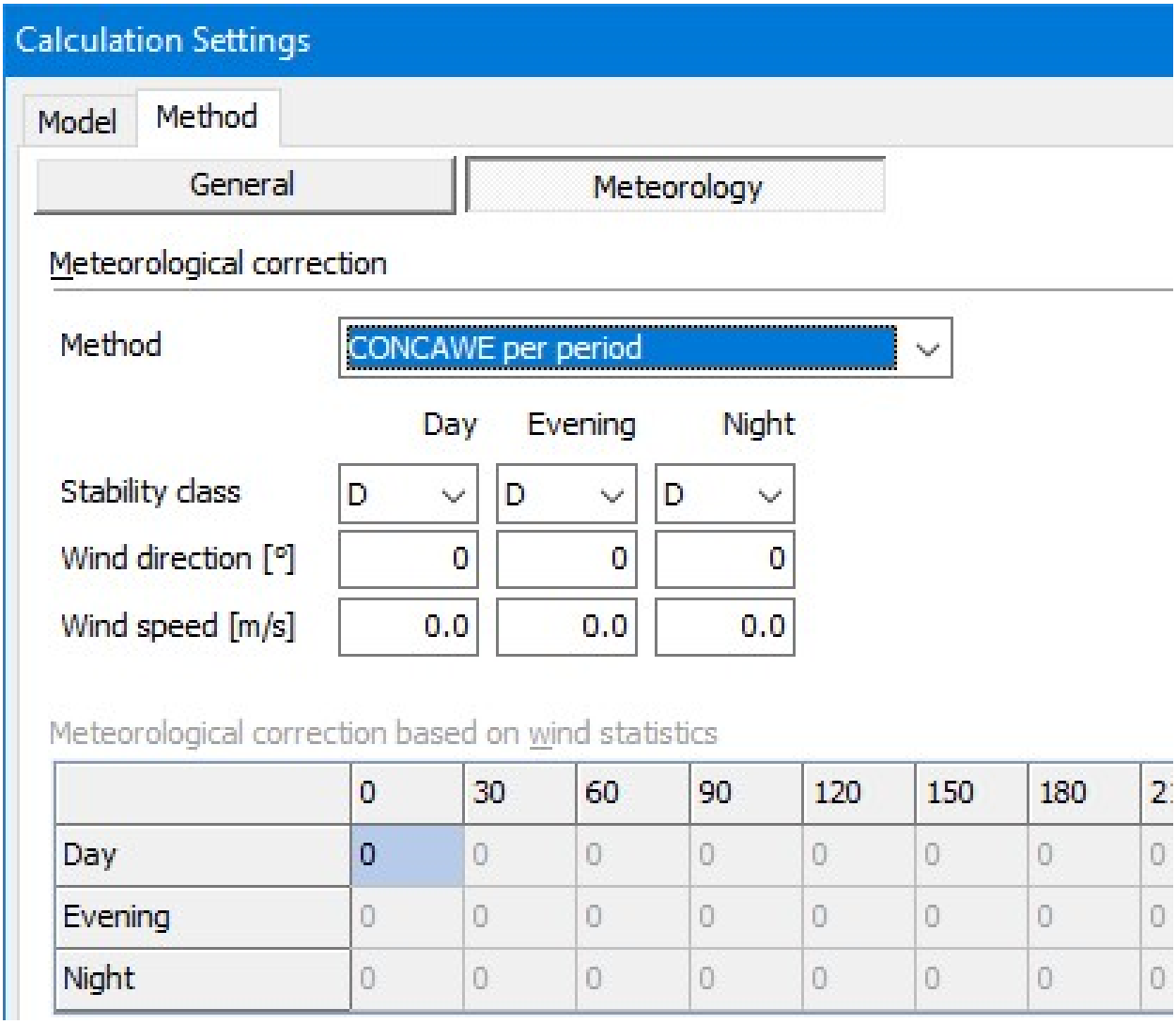
From: Erwin Hartog van Banda | DGMR <HA@DGMR.NL>
Sent: Sunday, 15 March 2020 10:11 PM
To: Christopher Marsh <Christopher.Marsh@epa.nsw.gov.au>
Subject: Concawe meteo in iNoise

Dear Christopher Marsh,

Here you receive the requested information. Please feel free to contact me again in case you need further information.

Yes, in iNoise the user is able to specify a Pasquill-Gifford stability class as well as the wind speed, direction, humidity and temperature. See the print screens below. Also no wind with stability class D can be used.


Calculation Settings
Model
Method
General
Meteorology
Meteorological correction
Method
CONCAWE per period
Day
Evening
Night
Stability class
D
D
D
Wind direction [°]
0
0
0
Wind speed [m/s]
0.0
0.0
0.0
Meteorological correction based on wind statistics
0
30
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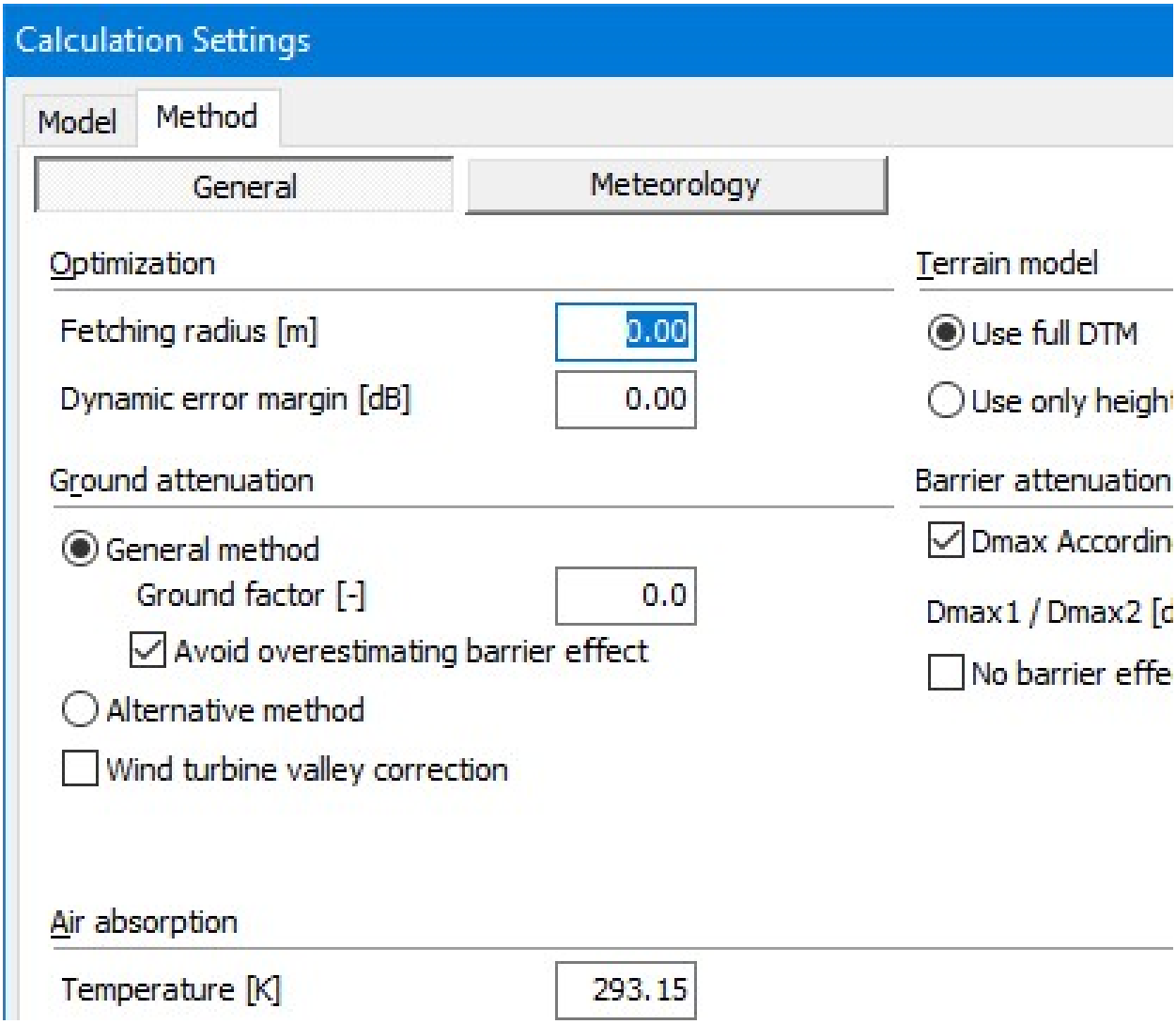
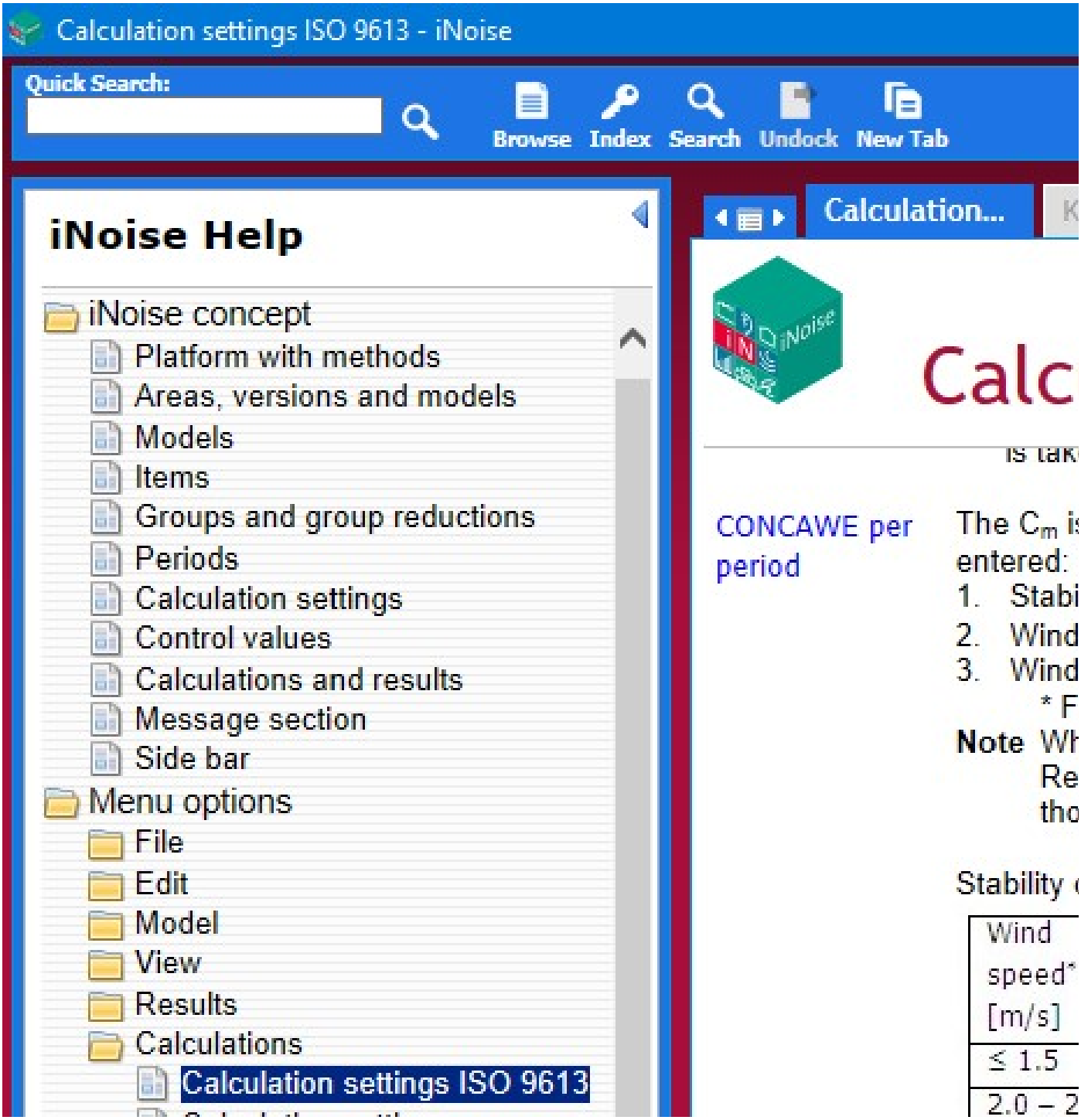
90
120
150
180
Day
Evening
Night



See also the help on the meteo settings in iNoise below.



Kind regards,

S.E. (Erwin) Hartog van Banda BSc
Product manager iNoise, Predictor and NoiseAtWork

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From: Chris Marsh <christopher.marsh@epa.nsw.gov.au>
Sent: vrijdag 13 maart 2020 03:26
To: Software Secretariaat | DGMR <Software@dgmr.nl>
Subject: Message from dgmrsoftware.com

Name *	Chris Marsh
Organisation	NSW EPA
Email address *	christopher.marsh@epa.nsw.gov.au
Country	Australia
Message *	Hi there, I would like to enquire about how your software implements ISO9613-2. Using iNoise, are you able to specify a Pasquill-Gifford stability class as well as the wind speed, direction, humidity and temperature? Are you able to model calm conditions (no wind with stability class D) as well? Many thanks, Chris

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