

HLWYM HEmails

From: Chandrika Manepally [cmanepally@swri.edu]
Sent: Thursday, February 07, 2008 7:08 PM
To: Randall Fedors; Hakan Basagaoglu
Cc: 'James R Winterle'; jude.mcmurry@swri.org; 'Robert J Lenhard'
Subject: RE: New AMR: Calibrated UZ Properties

Glad that we got this sorted out...

I was still wondering about your comment about parameters changing with boundary conditions... in a way we are still changing the top boundary condition (going from 10% to 90% percentile) and changing the hydro properties.... of course now, during a simulation, the hydro properties remain constant.. what does that tell us?

Now some food for thought - may not be of interest to UZ3 folks...It is related to (PTn/TSw interface)

I was just looking at the variation of gamma for tsw31 for the 4 cases...

Gamma				
	10th Percentile	30th Percentile	50th Percentile	90th Percentile
ptn26	0.001	0.001	0.001	0.001
tsw31	0.129	0.088	0.075	0.001
tsw32	0.4	0.4	0.393	0.4
tsw33	0.4	0.4	0.393	0.4
tsw34	0.4	0.4	0.4	0.4

Stu pointed out that we should also look at variation of permeability .. The matrix permeability also reduces from 10th to 90th percentile

Kmtx

	10th Percentile	30th Percentile	50th Percentile	90th Percentile
ptn26	3.16E-11	1.86E-11	3.16E-11	3.16E-11
tsw31	9.78E-17	3.21E-17	1.04E-16	2.62E-15
tsw32	4.55E-16	3.01E-16	1.70E-16	2.30E-16
tsw33	1.86E-17	1.86E-17	3.78E-17	3.97E-17
tsw34	3.16E+18	3.16E-18	3.16E-18	6.31E-18

Guess this needs to be looked at esp. its implications for the lateral flow diversion in the PTn...

-Chandrika

From: Randall Fedors [mailto:RWF@nrc.gov]
Sent: Thursday, February 07, 2008 11:37 AM
To: Hakan Basagaoglu
Cc: chandrika.manepally@swri.org; 'James R Winterle'; jude.mcmurry@swri.org; 'Robert J Lenhard'
Subject: RE: New AMR: Calibrated UZ Properties

Hakan,

I think some of the discussion yesterday arose because of confusion on the meaning of "infiltration based AFM parameters." I think we were alluding to the same thing, but just using different terminology. For clarity, I'll be explicit.

A decade ago, LBNL did change parameter values between the modern, monsoonal, and glacial transition climates (all for the base, or mean, case for example). Seeing how it is conceptually ludicrous that parameters should change based on the top boundary condition, DOE stopped doing it.

However, for uncertainty within the the modern climate, the calibration is done to the 4 different values (uncertainty in infiltration maps; use to be upper, mean, and lower; now its 10th, 30th, 50th, and 90th percentiles) derived by the Sandia net infiltration model. LBNL calibrates the measured site data (saturations, etc...) to each of the 4 (uncertainty) net infiltration maps. Then, the parameter sets are propagated to the analogous uncertainty map in the monsoonal and glacial transition climates. Thus, I got confused when you said infiltration-based because I think of it more as uncertainty-based AFM parameter changes. Infiltration-based terminology could also mean the changes in infiltration associated with changing from modern, to monsoonal, and to glacial transition climates. For example, the AFM values should not change going from the modern to the monsoonal and glacial transition for the 30th percentile.

Agreed? Yesterday, I thought we didn't agree. From your email below, I think we do agree. Alternatively, am I wrong about the values of gamma changing only for uncertainty?

--Randy

>>> hbasagaoglu <hbasagaoglu@cnwra.swri.edu> 02/07/2008 9:33 AM >>>
Chandrika, as I mentioned yesterday, DOE assigned different AFM parameter for each layer for different infiltration scenarios (lower-bound, mean, and upper-bound infiltration) in their DOE's 2005 Particle Tracking Parameter AMR (p. 48-50). They had claimed that they matched the water saturation and some other field data (through 3D inverse modeling) better with the adjusted infiltration-based AFM parameters. We need to find out if they still use the same information (i.e., infiltration based AFM parameter in their abstractions, or they have modified that). I will read through this AMR and the AMR that Jude mentioned yesterday to clarify this. And, it will be nice if we can also track this down using the Goldsim.

Hakan

-----Original Message-----

From: Chandrika Manepally [<mailto:cmanepally@swri.edu>]

Sent: Wednesday, February 06, 2008 7:04 PM

To: jude.mcmurry@swri.org; 'Hakan Basagaoglu'; 'Randy Fedors'; 'James R Winterle'

Cc: 'Robert J Lenhard'

Subject: RE: New AMR: Calibrated UZ Properties

Jude

Thank you for the information.

What I showed this afternoon was 30% percentile case.

As I mentioned this afternoon, gamma values don't change for units below repository horizon with respect to. climate.

I just noted that there are some changes at the PTn/TSw interface.

Hakan- let me know if you find the AMR that talks about varying gamma with climate for units below repository horizon.

-Chandrika

Hearing Identifier: HLW_YuccaMountain_Hold_EX
Email Number: 511

Mail Envelope Properties (0JVW005518D8TB40)

Subject: RE: New AMR: Calibrated UZ Properties
Sent Date: 2/7/2008 7:07:57 PM
Received Date: 2/7/2008 7:08:04 PM
From: Chandrika Manepally

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MESSAGE	4880	2/7/2008 7:08:04 PM

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