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Listing of numerical models for TRT evaluation

Dear colleague,

As you may already be aware, the IEA ECES opened an expert round in the year 2007 titled:"Annex 21 – Thermal Response Test". In the context of a final report of this Annex, the members decided to overview numerical models of vertical borehole heat exchangers which may be utilized for the evaluation of geothermal response tests.

As the author of such a model, we would be most pleased to receive your permission to give reference to your model. Further, it is planned to characterize each model with so called "key features" listed below, to facilitate the selection of appropriate models for specific test designs.

As no one has a better understanding of a model than the author himself, we would like to ask you to mark the key features which apply to your model. Simply return this filled-out word document to proell@muc.zae-bayern.de.

The Annex 21 experts group wishes to thank you for your support and hopes that the efforts will successfully assist in spreading the Thermal Response Test techniques worldwide.

With our best regards,

Manfred Reuß

Operating   Agent   Annex   21

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<u>KEY FEATURES:</u>

Name of the model:	…………………………………
FV, FE, FD:	finite volume/elements/difference
1D, 2D, 3D:	Dimensions
Ground layers:	Yes/No
CS, FLSA, ILSA:	Cylindrical source, finite source, infinite source
RA:	Accounts for thermal short current resistance in the borehole
Tave, Tinout:	Uses average fluid temperature or inlet and outlet fluid temperature
CG:	Accounts for borehole heat capacity
Rec, PL, HEX:	Handling of underground recovery, power loss, (heat extraction)
STS[1]:	short time steps possible?; with specification of the allowed minimum
GWF:	handling of ground water flow
Availability:	free/buy/none
Platform:	standalone / TRNSYS / other: _____

<u>Information on the author:</u>

Institute:	…………………………………
Paper/publication reference:	…………………………………
Further comments:	…………………………………

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[1] Is there a minimum time criterion within a heat pulse, which defines the validity of the solution of the temperature response?