

The Propagation Model AUSTAL2000 Understands By Deposition Loss And Not Storagen

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BACKGROUND

By the authors ***JANICKE (2000, 2002),*** Germany, becomes the Calculation of the spread of air pollutants the software AUSTAL2000 developed. This will be done in 2000 for all applications the Federal Environment Agency (UBA), Germany, declared binding. The author of this article recognizes from various examples and graphics that the algorithms and reference solutions are erratic. Consultations with the authors of the AUSTAL in Dunum were unsuccessful. Arrogant and complacent it is pointed out that one was commissioned solely with the model development and quality assurance. Later one reacts in ***Trukenmüller (2016)*** and ***Trukenmüller (2017)*** equally condescending and presumptuous. Outsiders have the impression that you want to disguise missing knowledge tricky. In 2014, the author of this article is reminded again by environmental engineers about wrong model calculations. In ***Schenk (2015-1)*** it is proved that AUSTAL is not validated. In ***Trukenmüller (2015),*** 14 officials, sworn experts, appraisers and other administrative workers object. They refer authoritarian to their mandate rather than physics and mathematics. The erroneous reference solution is first published. The editorial of the magazine IMMISSIONSSCHUTZ will be changed in 2015 / IV. Subsequently, all publications on AUSTAL will be rejected. In the publications ***JANICKE (2000, 2002)*** all calculation parameters for all reference solutions were published. They do not expect that there are scientists who can recalculate. The lack of knowledge of the authors of the Austal questions their expertise. It turns out that they were not able to obtain their doctorate either in their studies or later in the field of modeling the spread of air pollutants (LJ, Diss. 1970, UJ DA 1993, UJ Diss.1997). Her field of expertise is atom optics, laser technology and plasma physics. However, airborne dispersion modeling needs sound knowledge and practical experience in the fields of momentum, heat and mass transport, fluid mechanics and, for example, numerical mathematics. Only ignorance about it can be understood as comparing 3D wind fields with the rigid rotation of a solid in the plane. Basic procedural operations are confused and swapped Homogenizing with diffusion. The authors of the Austal do not know the difference between numerical and analytical solutions. Ordinary differential equations can not be solved. Numerical stability is unknown. Add to that a sloppy programming. ***Schenk (2018-2)*** summarized all the contradictions. With the claim of AUSTAL to be able to also describe the spread of odors, aerospace pollutants (LASPORT) and radionuclides (LASAIR), AUSTAL has developed from 1984 to the present into a true catastrophic event. Keywords: AUSTAL2000, Umweltbundesamt, UBA, Deposition, Partickelmodell, Lagrange'sche Ausbtreitungsmodell

OBJECTIVES

The aim of this work is to correct all reference solutions of the Austal. The environmental scandal of the AUSTAL 2000 has to be clarified.

MATERIALS & METHODS

As material all publications of the authors of the AUSTAL are available. Mathematics and mechanics as incorruptible tools for the clarification of contradictions are used as a method.

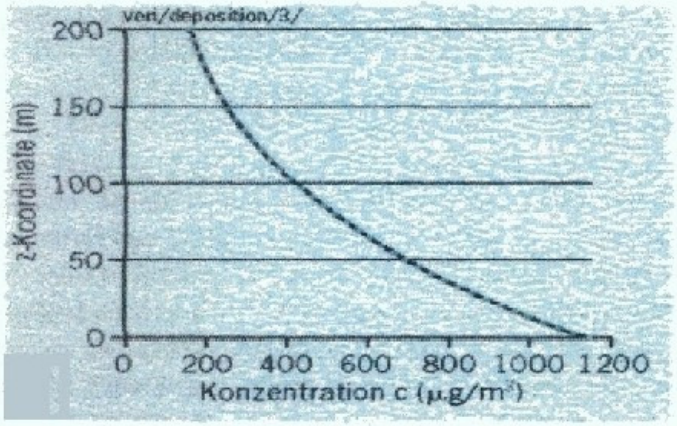
RESULTS

I. UNDER DEPOSITION UNDERSTAND THE AUTHORS THE AUSTAL LOSS

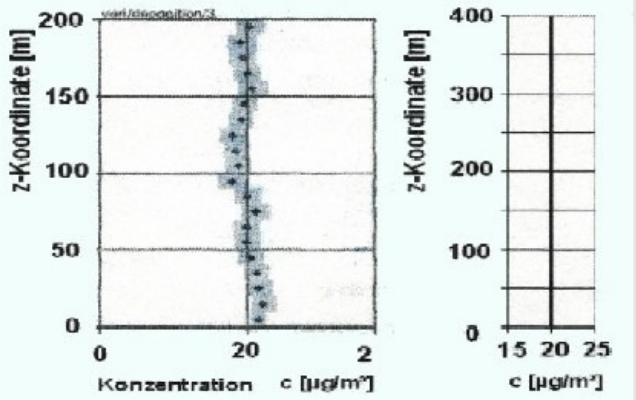
$$c(z)=c_o\cdot\exp\left(-z\cdot\frac{v_s}{K}\right)+\frac{c_o\cdot v_s}{v_d}\cdot\left(1-\exp\left(-z\cdot\frac{v_s}{K}\right)\right) \qquad K\cdot\frac{\partial c}{\partial z}+c\cdot v_s=c_0\cdot v_d$$

Faulty reference solution,Mass Conservation Laws and Principles injured, Depositionable material is lost, soil concentrations become tricky and flawed calculated, Become a user deceived

Case 22a, "Sedimentation without Deposition" after *Janicke (2002)*



Case 22b, "Sedimentation and Deposition" after *Janicke (2002)*



$$c_O(5)=\frac{\bar{c}\cdot L_z}{\int_O^{L_z}\exp\left(-z\cdot\frac{v_s}{K}\right)\cdot dz}=1100{,}6\ \frac{\mu g}{m^3}$$

Deceptive calculation of Soil concentrations, a conductive Material flow is directed into the atmosphere and is not zero, vanishing area emissions F_c=0, v_d=0, v_s=0,01, $c_o=F_c/v_d$

$$c_o=\frac{F_c}{v_d}=20\ \frac{\mu g}{m^3}$$

Incorrect calculation of Soil concentrations the conductive one Material flow is identical zero and not in the Directed to the ground, Source should be located at 200m altitude to have, F_c=1, v_c=0,05, v_s=0,05, $c_c=F_c/v_d$

II. THE TRUE LIFE HISTORY OF AUSTAL

(1984). *Axenfeld* describes a model for the calculation of dust precipitation. The deposition rate is defined as: "... a column standing on the surface of the earth, containing the material capable of being deposited, runs empty by deposition ...". Deposition means loss and not storage. **(1988).** In 1988, VDI wants to establish a new propagation theory with the faulty model of *Axenfeld.* **(2001).** The wrong model from Axenfeld is later developed into the model LASAT. LASAT is later inflated as the "parent model" designated by AUSTAL. **(2002).** In 2002, the authors *Janicke et al. (2002)* questionably developed a "model-based assessment system for plant-related pollution control" called AUSTAL2000. **(2015).** It is claimed that this false model can be used to calculate the spread of odors, radionuclides (LASAIR) and airport pollutants (LASPORT).**(2015).** *Schenk (2015-1)* proved that all reference solutions are flawed. Conservation and main sentences are violated. Soil concentrations

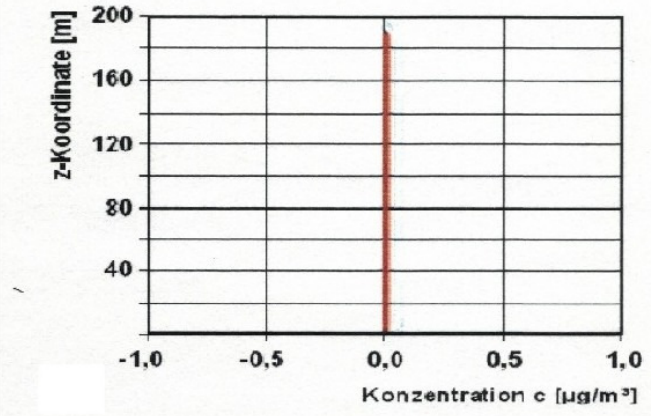
are calculated speculatively and deceptively. **(2015).** 2015 will be in *Trukenmüller et 13alli. (2015)* vehemently objected to all objections. 14 public officials, office managers, sworn experts, appraisers and administrative workers want to prove the contrary on behalf of the UBA. Theoretical fundamentals will be the first released. There is a lack of physical and mathematical expertise. **(2015).** Von *Schenk (2015-2)* uses integral sentences demonstrated that the violation of the main and Conservation principles is universal and not limited only to isolated cases. **(2015).** The reviewers of the journal IMMISSIONSSCHUTZ are being replaced. **(2016).** 2016 in *Trukenmüller (2016)* ignored all criticism. You do not know how the deposition speed is defined. **(2017).** In *Trukenmüller (2017)*, other definitions of the Deposition speeds given. Incredible authors are quoted. Physical expertise can not be recognized. Deceptive and arrogant you want to disguise lack of knowledge. (2017) *Janicke* wants to make up for the 3D wind field validation in 2017, but analytical and numerical solutions are confused. **(2017).** In 2017, *Janicke (2017)* wants to make up for the 3D wind field validation, but analytical and numerical solutions are confused. **(2018).** In *Schenk (2018-2)* all contradictions are analyzed in depth. It is shown that the authors of the AUSTAL deceive and trick. Soil concentrations are calculated chimerically. Pollutant particles are randomly redistributed, and the result is output as a reference solution. **(2018).** Since 1984, this chimeric propagation model has been generously funded by the UBA. The UBA has to explain itself.

III. DEPOSITION MEANS STORAGE AND NOT LOSS

$$c(z)=c_o\cdot\frac{v_s+v_d}{v_s}\cdot\left|1-\frac{v_d}{v_s+v_d}\cdot\exp\left(-z\cdot\frac{v_s}{K}\right)\right| \qquad K\cdot\frac{\partial c}{\partial z}\Big|_0-c_o\cdot v_d=0$$

Correct reference solution, Conservation and Principles are met Depositive material is stored in the ground, Soil concentrations are calculated physically justified, Users are able to recalculateen

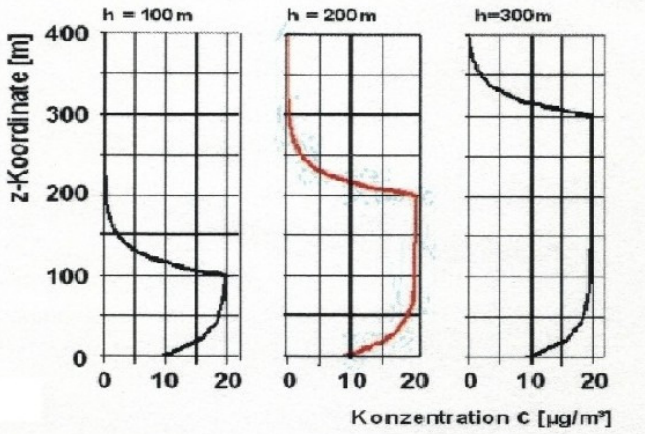
Case 22a, "Sedimentation without Deposition" after *Schenk (2015-2)*



$$c_0=\frac{Q}{v_s+v_d}=0\ \frac{\mu g}{m^3}$$

The soil concentrations are calculated physically justified, due to no deposition, the conductive material flow is identical zero, without emission means vanishing emissions, Q=1, v_d=0, v_s=0,01, c_o=Q/(v_d +v_s)

Case 22b, "Sedimentation and Deposition" after *Schenk (2015-2)*



$$c_0=\frac{Q}{v_s+v_d}=10\ \frac{\mu g}{m^3}$$

Correct calculation of soil concentration, the conductive stream is directed towards the ground, the emission sources are at different heights, Q=1, v_d=0,05, v_s=0,05,

IV. THE INCREDIBLE LIFE STORY OF AUSTAL THE AUTHORS

https://www.umweltbundesamt.de/themen/luft/regelungen-strategien/ausbreitungsmodelle-fuer-agenbezogene/uebersicht-geschichte

“The history of AUSTAL2000 started almost exactly 21 years ago. At the NATO CCMS conference in San Francisco, which took place end of August 1981, I had just presented my formulation of Lagrangian modelling in inhomogeneous turbulence, parallel to similar works by Wilson and Legg & Raupach; in doing so, I delivered a promise made to Hanna during a conference in the preceding year in Amsterdam. The preparations for the TA Luft 1983 had not yet finished, nevertheless the participants already discussed how the TA Luft should develop on an intermediate and long-term time scale. After the conference, we therefore sat together in the small village Kirkwood, in the mountains east from Jackson, in order to bring our ideas together (in the framework of the UBA project "handbook for immission calculations"). We, that was: Werner Klug, Paul Lühring, Rainer Stern, Robert Yamartino, and myself. Key points for a long-term concept that should reach about 5 to 7 years into the future were, among others: Now, after 21 years,major points of that former concept have been realised with the new TA Luft that came into force at October 1, 2002. Maybe one should meet again in the mountains and discuss how the dispersion model of the TA Luft should develop over the next 20 years….Lutz Janicke, 30.09.2002”. The authors of the AUSTAL not only lack Modesty but also of all knowledge, Propagation models of the past, the Being able to develop the present and the future.

SUMMARY

The authors JANICKE (2000, 2002) have developed a "model-based pollution assessment system" to calculate the spread of air pollutants under the name AUSTAL2000. This propagation model is declared binding in Germany for all applications. All model developers must validate their algorithms on this flawed model development. However, ***SCHENK (2015-1, 2018-2)*** shows that all referential solutions are wrong. Principal and conservation laws are violated. Using the example of reference cases 22a and 22b, the wrong solutions are compared with the right ones. The life story of the

AUSTAL is like an environmental catastrophe.

CONCLUSIONS

The propagation model AUSTAL2000 is not validated. Safety assessments, hazard analyzes and, for example, emergency plans developed with AUSTAL must be reviewed.

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Autorendetails werden präsentiert

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