

List of Publications

Prof. Dr. Erwin Zehe as author and co-author

Articles in peer reviewed, ISI listed journals

1. **Zehe, E.** and Flühler, H. (2001): Preferential transport of Isoproturon at a plot scale and a field scale tile-drained site. *Journal of Hydrology*, 247 (1-2), 100 - 115.
2. **Zehe, E.** and Flühler, H. (2001): Slope scale distribution of flow patterns in soil profiles. *Journal of Hydrology*, 247 (1-2), 116 - 132.
3. **Zehe, E.**, Maurer, T., Ihringer, J., Plate, E. (2001): Modelling water flow and mass transport in a Loess catchment. *Physics & Chemistry of the Earth, Part B*, Vol. 26 (7-8), 487 - 507.
4. Sivapalan, M., Takeuchi, K., Franks, S.W., Gupta, V. K., Karambiri, H., Lakshmi, V., Liang, X., McDonnell, J. J., Mendiondo, E. M., O'Connell, P. E., Oki, T., Pomeroy, J.W., Schertzer, D., Uhlenbrook, S., **Zehe, E.** (2003): IAHS decade on Predictions of Ungauged Basins (PUB): Shaping an exciting future for the hydrological sciences. *Hydrological Science Journal*, 48 (6), 857 - 879.
5. **Zehe, E.** and Blöschl, G.: (2004): Predictability of hydrologic response at the plot and catchment scales – the role of initial conditions. *Water Resources Research*, 40 (10): W10202, doi:10.1029/2003WR002869.
6. Lindenmaier, F. **E. Zehe**, A. Dittfurth, Ihringer, J. (2005): Process Identification at a slow-moving Landslide in the Voralberg Alps. *Hydrological Processes*, 19 (8), 1635 - 1651.
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9. Bolduan, R. and **Zehe, E.** (2006): Mikrobieller Abbau des Herbizids Isoproturon in Bioporen und der Bodenmatrix - Eine Feldstudie. *Journal of Plant Nutrition and Soil Science*, 169 (1), 87 - 94.
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11. **Zehe, E.**, Singh, A., Bárdossy, A (2006): Modelling of monsoon rainfall for a mesoscale catchment in North-West India I: Assessment of objective circulation patterns. *Hydrology and Earth System Sciences*, 10, 797 - 806.
12. **Zehe, E.**, Singh, A., Bárdossy, A (2006): Modelling of monsoon rainfall for a mesoscale catchment in North-West India II: Stochastic rainfall simulations. *Hydrology and Earth System Sciences*, 10, 807 - 815.

13. **Zehe, E.**, Lee, H. Sivapalan, M. (2006): Dynamical process upscaling for deriving catchment scale state measures and constitutive relations for meso-scale process models. *Hydrology and Earth System Sciences*, 10, 981 - 996.
14. Lee, H. Sivapalan, M. **Zehe, E.** (2007): Predictions of rainfall runoff and soil moisture dynamics in a microscale catchment using the CREW model. *Hydrology and Earth System Sciences*, 10, 819 - 849.
15. **Zehe, E.**, G. Elsenbeer H., Lindenmaier, F., Schulz, K., Blöschl, G. (2007): Patterns of predictability in hydrological systems with threshold dynamics. *Water Resources Research*, 43, W07434, doi:10.1029/2006WR005589.
16. Blume T., **Zehe, E.**, Iroume A., Bronstert A. (2007): Rainfall runoff response and baseflow separation. *Hydrological Science Journal*, 52, (5), 843 - 862.
17. Krause S, Habeck, A., Jacob, J., Bronstert, A., **Zehe, E.** (2007): Assessing the impact of changes in landuse and management practices on the diffuse pollution and retention of nitrate in a riparian floodplain. *Science of the total Environment*, 389 (1) doi: 10.1016/j.scitotenv.2007.08.057.
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19. Blume, T., **Zehe, E.**, Reusser D., Bauer A., Iroumé A. Bronstert, A. (2008): Investigation of runoff generation in a pristine, poorly gauged catchment in the Chilean Andes I: A multi-method experimental study. *Hydrological Processes*, DOI: 10.1002/hyp.6971.
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21. Das, T., Bárdossy, A., Yi, H., **Zehe, E.** (2008): Comparison of model performance using different representations of spatial variability. *Journal of Hydrology*, DOI: 0.1016/j.hydrol.2008.04.008.
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27. **Zehe, E.** and M. Sivapalan (2009): Threshold behavior in Hydrological Systems as (human) Geo-Ecosystems: Manifestations, Controls and Implications. *Hydrology and Earth System Sciences*, 13, 1273 - 1297.
28. Wienhöfer, J., K. Germer, F. Lindenmaier, A. Färber and **E. Zehe** (2009): Applied tracers for the observation of subsurface stormflow on the hillslope scale. *Hydrology and Earth System Sciences*, 13, 1145 - 1161.
29. Schäfli, B. and **E. Zehe** (2009): Hydrological model performance and parameter estimation in the wavelet-domain. *Hydrology and Earth System Sciences*, 13, 1921-1936.
30. **Zehe, E.**, T. Blume and G. Blöschl (2010): The principle of “maximum energy dissipation”: a novel thermodynamic perspective on rapid water flow in biological soil structures. *Phil. Trans. R. Soc. B*, 1–10, doi:10.1098/rstb.2009.0308.
- 31 Klaus, J. and **Zehe, E.** (2010): Modelling rapid flow response of a tile drained field site using a 2D-physically based model: assessment of “equifinal” model setups. *Hydrological Processes*, **24**, 1595–1609 DOI: 10.1002/hyp.7687.
32. Tietjen, B., F. Jeltsch, **E. Zehe**, N. Classen, A. Groengroeft, K. Schiffers and O. J. (2010): Effects of climate change on the coupled dynamics of water and vegetation in drylands. *Ecohydrology*, 3, 226 -237 (www.interscience.wiley.com) DOI: 10.1002/eco.70
33. **Zehe, E.**, Gräff, Th., Schlaeger, S., Morgner, M., Bauer, A., Bronstert, A. (2010): Plot and field scale soil moisture dynamics and subsurface wetness control on runoff generation in a headwater in the Ore Mountains. *Hydrol. Earth Syst. Sci.*, 14, 873–889, doi:10.5194/hess-14-873-2010
34. Graeff, T., **Zehe, E.**, Schlaeger, S., Morgner, M., Bauer, A., Becker, R., Creutzfeldt, B., and Bronstert, A. (2010): A quality assessment of Spatial TDR soil moisture measurements in homogenous and heterogeneous media with laboratory experiments, *Hydrol. Earth Syst. Sci.*, 14, 1007-1020, doi:10.5194/hess-14-1007-2010.
35. Wienhöfer, J., F. Lindenmaier, **E. Zehe** (2010): Challenges in understanding slow-moving landslides: Slope mobility and hydrological processes at the *Heumöser* landslide, Vorarlberg, Austria. Forthcoming Special Section on Landslides: doi:10.2136/vzj2009.0182..
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40. Reusser, D., and Zehe, E. (2011): Inferring model structural deficits by analyzing temporal dynamics of model performance and parameter sensitivity. *Water Resour. Res.*, doi:10.1029/2010WR009946.
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42. Hinkelmann, R., E. Zehe, et al. (2011): Special Section on Landslides: Setting the Scene and Outline of Contributing Studies. *Vadose Zone Journal*, **10**(2), 473-476.
43. Wienhoefer, J., F. Lindenmaier, Zehe E. (2011): Challenges in Understanding the Hydrologic Controls on the Mobility of Slow-Moving Landslides. *Vadose Zone Journal* **10**(2): 496-511.
44. Bronstert, A. Creutzfeldt, B., Graeff, T., Hajnsek, I., Heistermann, M., Itzerott, S. Jagdhuber, T., Kneis, D., Lueck, E., Reusser, D., Zehe, E. (2011) Potentials and constraints of different types of soil moisture observations for flood simulations in headwater catchments. *Nat Hazards*, 59, DOI 10.1007/s11069-011-9874-9.
45. He Y, Bardossy A, **Zehe E** (2011): A catchment classification scheme using local variance reduction method. *Journal Of Hydrology* 411(1-2):140-154.
46. He Y, Bardossy A, **Zehe E** (2011): A review of regionalisation for continuous streamflow simulation. *Hydrology And Earth System Sciences* 15(11):3539-3553.
45. Koehler, B, Corre, M. D., Steger, K, Well, R., **Zehe, E.**, Sueta, J., Veldkamp, E. (2012): An in-depth look into a tropical lowland forest soil: How 9-11 years experimental nitrogen addition affected the contents of N₂O, CO₂ and CH₄ down to 2-m depth, accepted at *Biogeosciences*.
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47. Scherer U, Zehe E, Träbing K, & Gerlinger K (2012) Prediction of soil detachment in agricultural loess catchments: Model development and parameterisation. *Catena* 90(0):63-75.

Special Issues, Monographs, and Edited Volumes

1. **Zehe, E.** (1999): Stofftransport in der ungesättigten Bodenzone auf verschiedenen Skalen. *Mitteilungen Institut f. Hydrologie und Wasserwirtschaft* H. 64, Universität Karlsruhe.
2. Sivapalan, T. Wagener, S. Uhlenbrook, **E. Zehe**, V. Lakshmi, X. Liang, Y. Tachikawa & P. Kumar (Editors) (2006): *PUB Promise and Progress, IAHS Publication 303*.

3. Plate, E. und **Zehe, E.** (2008): Hydrologie und Stoffdynamik kleiner Einzugsgebiete: Prozesse und Modelle. Schweizerbart, 366pp, ISBN 978-3-510-65238-9.
4. **Zehe, E.** and Sivapalan, M. (2006): Towards a new generation of hydrological process models for the meso scale. *Special issue in Hydrology and Earth System Sciences*, 10.
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1. **Zehe, E.**, Stehlik, J., Bárdossy, A. (2003): Regionale Auswirkungen von Klimaänderungsszenarien auf den Wasserhaushalt und auf Hochwasser. In Klima – Wasser – Flussgebietsmanagement im Lichte der Flut, Kleeberg, H. B. (Herausgeber) Schriftenreihe der Fachgemeinschaft Hydrologische Wissenschaften und des Hauptausschusses *Hydrologie und Wasserbewirtschaftung*, Heft 04.03, 85 - 93.
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3. **Zehe, E.**, Bolduan, R.; Bronstert, A., Bárdossy, A., Plate, E (2004): Stofftransport in einem Lösseneinzugsgebiet: Experimentelle Evidenz und numerische Modellierung. in A. Bronstert, A. Thieken, B. Merz, M. Rode & L. Menzel (Herausgeber): „Wasser- und Stofftransport in heterogenen Einzugsgebieten“, Schriftenreihe der Fachgemeinschaft Hydrologische Wissenschaften und des Hauptausschusses *Hydrologie und Wasserbewirtschaftung*, Heft 05.04, 27 - 40.
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5. Singh, A., **Zehe, E.**, Bárdossy, A. (2005): Downscaling atmospheric circulation for monsoon rainfall forecasting in India. In Regional Hydrological Impacts of climate change – hydroclimatic variability. Franks S., Wagener, T., Bøgh, Gupta H., Bastidas, L. Nobre, C., De Oliveira Calvao, C. (Editors) *IAHS Publication 296*, 291 - 298.
6. Lee, H., M. Sivapalan and **E. Zehe** (2005). Representative Elementary Watershed (REW) approach, a new blueprint for distributed hydrologic modelling at the catchment scale: the development of closure relations. In: PREDICTING UNGAUGED STREAMFLOW IN THE MACKENZIE RIVER BASIN: TODAY'S TECHNIQUES & TOMORROW'S SOLUTIONS, C. Spence, J. Pomeroy and A. Pietroniro (Editors), Canadian Water Resources Association (CWRA), Ottawa, Canada.
7. Lee, H., M. Sivapalan and **E. Zehe** (2005): Representative Elementary Watershed (REW) approach, a new blueprint for distributed hydrologic modelling at the catchment scale. In: Predictions in Ungauged Basins: INTERNATIONAL PERSPECTIVES ON STATE-OF-THE-

ART AND PATHWAYS FORWARD, Proceedings of the Australia-Japan Workshop on PUB Working Groups, S. W. Franks, M. Sivapalan, K. Takeuchi and Y. Tachikawa (Editors), *IAHS Publication 301*.

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9. Lee, H., M. Sivapalan and **E. Zehe** (2005): Representative Elementary Watershed (REW) approach, a new blueprint for distributed hydrologic modelling at the catchment scale: numerical implementation. In: Physically Based Models of River Runoff and their Application to Ungauged Basins, Proceedings, NATO Advanced Workshop, P. E. O'Connell and L. Kuchment (Editors), Newcastle-upon-Tyne, UK.
10. Lindenmaier, F., **Zehe, E.**, Helms, M., Evdakov, O. and Ihringer (2006): Effect of soil shrinkage on runoff generation in micro and mesoscale catchments. In PUB: Promises and Progress. M. Sivapalan, T. Wagener, S. Uhlenbrook, **E. Zehe**, V. Lakshmi, X. Liang, Y. Tachikawa & P. Kumar (Editors), *IAHS Publication 303*.
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12. Das, T., Bárdossy, A., **Zehe, E.** (2006): Influence of spatial variability of precipitation on distributed rainfall-runoff modeling. PUB: Promise and Progress, M. Sivapalan, T. Wagener, S. Uhlenbrook, **E. Zehe**, V. Lakshmi, X. Liang, Y. Tachikawa & P. Kumar (Editors), *IAHS Publication 303*.
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14. Krause S., Bronstert A., **Zehe, E.** (2007): Groundwater–surface water exchange fluxes in a Pleistocene lowland and the impacts on riparian zone water balance and nitrate conditions. Water Quality and Sediment Behaviour of the Future: Predictions for the 21st Century. (Proceedings of Symposium HS2005 at IUGG2007, Perugia, July 2007, *IAHS Publication 314*.
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Stoffdynamik kleiner Einzugsgebiete - Prozesse und Modelle, Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), 29 - 67.

17. **Zehe, E.** und Schmaland, G. (2008): Untersuchung zu Makroporen und präferentiellen Fließwegen im Weiherbachgebiet. In Erich J. Plate und Erwin Zehe: Hydrologie und Stoffdynamik kleiner Einzugsgebiete - Prozesse und Modelle, Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), 131 - 137.
18. **Zehe, E.,** Bolduan H., Plate, E.(2008): Untersuchungen zu präferentiellem Stofftransport auf der Punkt- und Hangskale. In Erich J. Plate und Erwin Zehe: Hydrologie und Stoffdynamik kleiner Einzugsgebiete - Prozesse und Modelle, Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), 192 - 199.
19. **Zehe, E.,** Maurer T, Plate E. (2008): Simulation des Wasser- und Tracertransports auf der Ereignisskale. In Erich J. Plate und Erwin Zehe: Hydrologie und Stoffdynamik kleiner Einzugsgebiete - Prozesse und Modelle, Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), 255 - 259.
20. **Zehe, E.,** Maurer T, Plate E. (2008): Langzeitsimulation des Wasser- und Tracertransports. In Erich J. Plate und Erwin Zehe: Hydrologie und Stoffdynamik kleiner Einzugsgebiete - Prozesse und Modelle, Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), (2008), 264 - 271.
21. **Zehe, E.,** und Plate E. (2008): Vorhersagbarkeit von Transport und Abflussbildung auf der Punkt und Gebietskale: Der Einfluss unsicherer Anfangsbedingungen. In Erich J. Plate und Erwin Zehe: Hydrologie und Stoffdynamik kleiner Einzugsgebiete - Prozesse und Modelle, Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), 301-310.
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23. **Zehe, E.,** Becker R., Bárdossy A., Plate E. (2008):Vorhersagbarkeit von Abflussbildung auf der Gebietskale: der Einfluss der räumlichen Niederschlagsvariabilität. In Erich J. Plate und Erwin Zehe: Hydrologie und Stoffdynamik kleiner Einzugsgebiete - Prozesse und Modelle, Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), 313 -317.
24. **Zehe, E.,** und Plate E. (2008): Skalierung der spezifischen Abflussbildung mit der Größe der Aggregationsfläche. In Erich J. Plate und Erwin Zehe: Hydrologie und Stoffdynamik kleiner Einzugsgebiete - Prozesse und Modelle, Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller), 317-320.
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27. Stadler, L., R. Hinkelmann and **E. Zehe** (2009): Two-Phase Flow Simulation of Water Infiltration into Layered Natural Slopes Inducing Soil Deformation. *Landslides Processes - From Geomorphologic Mapping to Dynamic Modelling, CERG Strasbourg, France, ISBN 2-95183317-1-4.*
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Conference publications and extended abstracts

1. **Zehe, E.** und Plate, E. J. (1997): Transport eines konservativen Tracers auf der Kleinzugsgebietskala: Regionalisierungskonzept und erste Ergebnisse. Mitteilungen der Deutschen Bodenkundlichen Gesellschaft (DBG), Band 85, Heft I, 187- 190, Postervortrag bei der Jahrestagung der Deutschen Bodenkundlichen Gesellschaft in Konstanz, September 1997.
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