Curr. Vitae (2019)

Theo Olsthoorn, Prof. Dr. Ir., Rotterdam, 5-2-1950.

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Married, 2 sons (1978,1980)

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Education

MSc in Civil Engineering, Delft University of Technology, 1974. Specializations sanitary engineering and subsurface hydrology. Thesis on Artificial Recharge of Groundwater and groundwater hydrology.

PhD at TUDelft 1998 on Groundwater modeling and calibration.

Career

1974-1979	Kiwa research institute 1974-1979. Project leader, researcher artificial recharge through wells. Project leader, researcher.
1980-1980	IWACO (international water supply consultants, Rotterdam) Various projects. Project leader, researcher.
1981-1982	Kiwa research institute Various projects. Project leader, researcher.
1982-1990	RID/RIVM Transboundary groundwater impacts of German lignite mining. Project leader, researcher. Geothermal energy. Project leader, researcher. Integrated environmental modeling. Head of group and researcher.
1990-201	Amsterdam Water Supply/Waternet Head of hydrology section. Researcher. Hydrologist.

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2004-2014	TUDelft, part-time (33%) Professor groundwater exploration.
2015-	Retired Prof. Emer. Involvements since 2015: Yearly course transient groundwater flow IHE-UNESCO, Delft (see Github/Olsthoorn) Gave Python course 2017. (see Github/Olsthoorn) Groundwater modeling course (see Github/Olsthoorn) Advisor to the Waterboard Schieland (2015-2016) regarding groundwater issues associated with the new Motorway A4 between Delft and Schiedam. For Nectaerra Consultancy. Modeling the development of the fresh-saline water distribution over geologic time in a complex 150 km long 5 km high geologic cross section in the Middle East. Advisor to National Water Authority (2016) regarding groundwater risks encountered with widening and deepening of existing canals in the East of the Netherlands. Advisor to National Water Authority (2017-2019) regarding groundwater issues with respect to the dewatering for the new Sea Sluice in Terneuzen in the southwest of the Netherlands. Advisor to Deme-Group (2017-2019) regarding groundwater issues, analysis and modelling with respect to the widening and deepening of the Juliana Canal in the southeast of the Netherlands. Advising expert to Waternet (2014-2016) with respect to the Managed Aquifer Recharge pilot in Deyang, China. Advising expert to Waternet (2017-2019) with respect to the Managed aquifer Recharge pilot in the Chaobai river, Beijing, China and the guidelines for Managed Aquifer Recharge for the Asian Development Bank. ***Video by Jos Peters and Theo Olsthoorn on 7 decades of Mananged Aquifer Recharge in the Netherlands***

With English subtitles:

https://www.linkedin.com/feed/update/urn:li:ugcPost:6456835201141215232/

With Chinese subtitles:

https://dms.licdn.com/playback/C5605AQHv363U6RJceg/0850f4c36ea043798967788ee006f452/feedshare-mp4_3300-captions-thumbnails/1507940147251-drlcss?e=1562662800&v=beta&t=C1ipqKpDlRF1kH_EocnqsvjO2S953rkLPF-qgNHk5rk

Professional

Various committees as project leader and president.

Organized/President Artificial Recharge Conf. in Amsterdam, 1998

Organized/President Salt Water Intrusion Meeting, Delft, 2002

Book

Huisman/Olsthoorn (1983) Artificial Recharge. Book Pitman, London etc.

Reports recent

Olsthoorn, T.N. (2014) Schaliegas, beheersing van de risico's voor ons groundwater. In opdracht van VEWIN. 80pp. (*Scale case, dealing with the risks for our groundwater*).

Olsthoorn, T.N. (2011) Geologische Berging van Radioactief Kernafval in België Mogelijk gevolgen voor Nederland. Rapport in opdracht van de provincie Brabant. (*Geologic storage of radio-active waste of Belgium. Possible consequences for the Netherlands*).

Papers (except older Dutch ones)

Olsthoorn, TN and JH Peters (2019) Het concept heeft toegevoegde waarde voor aziatische steden. H2O Nr. 6, July, p 24-26 (In Dutch) "The concept (of Managed Aquifer Recharge) has added value for Asian cities.

Van Ginkel and TN Olsthoorn (2019) Distribution of grain size and resulting hydraulic conductivity in land reclamations constructed by bottom dumping, rainbowing and pipeline discharge. Water Resources Management. Vol 33 (3) 993-1012

Bloemendal JM, Jaxa-Rozen M, Olsthoorn TN (2018) Methods for planning ATES systems. Applied Energy. Vol. 216, 534-557

Bloemendal JM, Olsthoorn TN (2018) Ates systems in aquifers with high ambient flow velocity. Geothermics. Vol. 75, 81-92.

Jeuken A, Termansen M, Antonellini M, Olsthoorn T, Van Beek E (2017) Special Issue: Climate-proof fresh-water supply in Coastal Areas and Deltas in Europe. Water Resources Management Vol. 31, 2, 583-725.

Van Ginkel, MB des Tombe, TN Olsthoorn and M Bakker (2016) Small-scale ASR between flow barriers in a saline aquifer. Groundwater. https://doi.org/10.1111/gwat.12427

Geelen LHWT, Kamps PTWJ, Olsthoorn TN (2016) From over-exploitation to sustainbable use. An overview of 160 years of water extraction in the Amsterdam dunes, the Netherlands. Journal of Coastal Conservation Vol. 21 (5) 657-668.

Mulder G, Olsthoorn TN, Al-Manmi DAMA, Schrama EJO, Smidt EH (2015) Identifying Water-Mass Depletion in northern Iraq observed by Grace. Hydrology and Earth Sciences Vol. 19, 10, 1487-1500 (14p)

Bloemendal JM, Olsthoorn TN, Van de Ven, F. (2015) Combining climate and geo-hydrological preconditions as a method to determine world potential for aquifer thermal energy storage. Science of the Total Environment. Vol. 538, 621-633,

Bloemendal JM, Olsthoorn TN, Boons F (2014) How to achieve optimal sustainable use of the subsurface for thermal aquifer storage. Energy Policy Vol. 66, 104-114

Olsthoorn, TN (2014) Tussen De Glee en Dupuit, revisited. Stromingen JRG 20, Nr.1, p35-55 "In between De Glee and Dupuit"

Olsthoorn, TN (2014) De dynamiek van de verlaging in Terwisscha of in vergelijkbare situaties. "The dynamics of the drawdown in Terwischa or in comparable situations". Stromingen, JRG 20, nr. 1, p15-33.

Bloemenal, M, Olsthoorn, TN and Boons, F (2014) How to achieve optimal and sustainable use of the subsurface for Aquifer Thermal Energy Storage. Energy Policy, Vol 66, p104-114.

Van Ginkel, M, TN Olsthoorn and M. Bakker (2014) A new operational paradigm for small-scale ASR in saline aquifers. Groundwater 2014. https://doi.org/10.1111/gwat.12113

Alam, N. And Olsthoorn, TN (2014) Punjab scanvenger wells for sustainable additional groundwater irrigation. Agricultural Water Management, in Press.

Alam, N. And Olsthoorn TN (2014) Re-evaluating the US Geological Survey's pumping tests (1967) in the Punjab region of Pakistan for use in groundwater studis. Hydrogeology Journal, doi: 10.1007/s10040-014-1098-0.

Alam, N. and Olsthoorn TN (2014) Punjab Scavenger wells for sustainable additional groundwater irrigation. Agricultural Water Management. Vol 138, p55-67.

Griffioen, Van Wensum, J, Oomes, JLM, Barends F, Breunese, J, Bruining, H, Olsthoorn, T, Stams,JM and Van der Stoel, AEC (2014) A technical investigation on tools and concepts for sustainable management of the subsurface in the Netherlands. Sci. Total Env. Jul 18; 485-486:810-9. Epub 2014 Mar 18.

Alam, N and Olsthoorn, TN (2013) Sustainable conjunctive use of groundwater for additional irrigation. Hydrological Processes. Doi: 10.1002/hyp.1149.

Alam, N. And Olsthoorn, TN (2013) Multidepth pumping tests in deep aquifers. Ground Water, doi: 10-1111/gwat.12155.

Van Ginkel, M, Olsthoorn, TN and Bakker M (2013) A new operational paradigm for small-scale ASR in saline aquifers. Ground Water 2013 Sep 19. Epub 2013 Sep 19.

Amuth, JR, Maas C, Knotters M, … Olsthoorn TN (2012) Software for hydrogeologic time series analysis, interfacing data with physical insight. Environmental Modeling and Software Vol38, p178-190.

Van Ginkel, M, Olsthoorn, TN and Des Tombe, B (2012) Using density difference to store fresh water in saline subsurface. EGU general assembly held 22-27 April 2012, Vienna Austria. P4073.

Amtuth JR, Maas K, Knotters M, Bierkens MFP, Bakker M, Olsthoorn TN, Cirkel DG, Leunk I, Schaars F, Von Asmuth DC (2012) Software for hydrologic time-series analysis Interfacind Data with Physical Insight. Environmental Modeling and Software. Vol. 38, Dec. 178-190.

Karlsen, RH, Smits, FJC, Stufyzand, PJ, Olsthoorn TN, Breukelen BM (2012) A post-audit and reverse modeling in reactive transport: fifty years of artificial recharge in the Amsterdam Water-Supply Dunes. Journal of Hydrology. Vol. 454, p7-25.

Bloemendal JM, Olsthoorn TN, Timmermans J (2011) Bodemenergie en Smart Grids (Subsurface thermal energy and smart grids) First national conference on subsurface energy. Utrecht, NL, Oct. 13-14. http://resolver.tudelft.nl/uuid:551931bf-74d1-4a85-90d8-e8fda75cf1b1

Alam, N and Olsthoorn, TN (2011) Sustainable conjunctive use of surface and groundwater: Modeling on the basin scale. ECOPERSIA, Vol. 1, issue 1, p1-12.

Van Ginkel M., Olsthoorn, Smidt, R., Darwish, R., Rashwan, S. (2010) Fresh-Storage-Saline-Extraction wells: improving small-scale buffering of desalinated water in saline aquifers. ISAR, conf. Abu Dhabi 2010)

Steward DR, De Lange WJ, Yang X, Vasak SL, Olsthoorn TN (2009) Groundwater Ecology: GIScience tools to forecast change and sustainability of global ecosystems, studies in Africa, Europe and North America. HESSD, Vol. 6, 2795-2844

Van Mazijk A, Olsthoorn TN, Duijvenboode SW (2009) Het Betuwepand en het stoftransport in Lek en Amsterdam-Rijnkanaal. Stromingen, ("The Betuwe Reach and the transport of matter in Lek river and the Amsterdam Rhine Canal"). Vol. 15, 3, 19-28.

Olsthoorn, TN and Kamps PWTJ (2006) Challenges to calibration: Facing an inceasingly critical environment. Ground Water 2006 Nov-Dec;44(6):876-9.

Olsthoorn TN (2008) Do a bit more with convolution. Ground Water Vol. 46, p13-22.

Olsthoorn TN (2008) Wichelen ("Dowsing") in Stromingen Vol. 14, 3, 7-15.

Tuinhof, A. Olsthoorn, T, Heederik P-J et al (2005) Groundwater storage and water security: making better use of our largest reservoir. Int. Conf. On Climate change and water Management. Amsterdam. Sept 27-29, 2004. Water Science and Technology. Vol. 51, Issue 5, p141-148

Olsthoorn, TN, Poeter E. And Moorman, J. (2003) Lessons from analysing trial and error calibrated models for prediction reliability. Conf. On calibration and reliability of groundwater modeling (Modelcare, 2002) Jun 17-20, Prague. IAHS Publication 227, p247-258

Olsthoorn, TN (1999) A comparative review of analytic and finite difference models used at the Amsterdam Water Supply. Journal of Hydrology, Vol 226, Issu 3-4, p139-143.

Bakker, M, Andersen EI, Olsthoorn, TN et al. (1999) Regional groundwater modeling of the Yucca Mountain site using analytic elements. Journal of Hydrology, Vol 226, issue 3-4, p167-178.

Breukelen, BM, Appelo CAJ, Olsthoorn TN (1998) Hydrogeochemical transport modeling of 24 years of Rhine water infiltration in the dune of the Amsterdam Water Supply. Journal of Hydrology, Vol. 209, Issue 1-4, p281-296

Olsthoorn, TN and Kamps PTWJ (1996) Groundwater-model calibrtion for the Amsterdam Water Supply dune area. ModelCare Conference, Golden CO. IAHS Publication 237, p105-114

Olsthoorn TN (1995) Effective parameter optimization for model calibration. Ground Water Vol. 33, Issue 1 , p42-48.

Olsthoorn TN (1985) The power of the electronic Spreadsheet. Ground Water, Vol. 23, Issue 3, p381-390.

Conference contributions (since 2000, skipping 1974-1999)

Saltwater Intrusion Meeting, Myzoryze, Poland, 2000

Toshka Artificial Recharge Course, Egypt, 2005

Analytical Element Conference, Manhattan, Kansas (2006)

Modflow Conference, Colorado (2006)

Salt Water Intrusion Meeting, Cagliari, Italy (2006)

International Symposium on Artificial Recharge, Phoenix Az, (2007)

Modflow Conference, CO, 2008

Groundwater Symposium, Bunnik, Netherlands, 2008

Workshop Water, Suriname, 2008

Salt-Water Intrusion Meeting, Naples, Florida, 2008

Groundwater Summit, Tucson, AZ, 2009

AGU, San Francisco, 2010

Groundwater Summit, Denver, Co, 2010

ISMAR 7, Abu Dhabi, 2010

Conf. 400 collaboration NL-Morocco, Casablanca, 2010

Salt-Water Intrusion Meeting, Azores, 2010

Modlfow Conference, Golden, CO, 2011

VEWIN conf. Groundwater The Last Frontier, Utrecht, 2011

NHI-afternoon presentations, De Reehorst, 2011

International Water Week, Amsterdam, 2011

Presentations day: Time Series Analysis, KWR, 2012

Panel Visie op het aardwetenschappelijke wetenschapesveld (Vision on the earchsciences), Veldhoven, 2012

Salt Water Intrusion Meeting, Buzios, Brazil, 2012

Artificial Recharge Workshop, Atlantis, South-Africa, 2012

Modflow Conference, Golden, Co. 2013

Analytic Element Conference, Golden, Co. 2013

Traditional Water Systems Workshop, Morocco, Marrakech, 2013

NHV lezingenmiddag, Tussen De Glee en Dupuit, Deltares, Utrecht, 2013

Symposium nav promotie Perry de Louw, Deltares, Utrecht, 2013

Deyang, Managed Aquifer Recharge workshop. Presentation (21-02-2014)

Salt-water Intrusion Meeting, Husum, Germany, (20-06-2014)

Value of Groundwater Conf. Netherlands (23-09-2015)

Conf. Erfoud, Morocco. The Khettaras of Erfoud (Oct. 2015)

Experience abroad

Egypt (1994-2004)

Morocco (2010-2015)

Suriname (2008-2010)

USA (1995) (see below)

Key Qualifications

- Researcher - hydro-geologist
- Professor groundwater hydrology at the University of Technology Delft, Netherlands 2004-2014. Research on fresh and salt groundwater, artificial recharge, teaching, guiding MSc students and PhD students.
- Guest lecturer on groundwater at UNESCO-IHE Institute for Water Education in Delft, Netherlands for 15 years.
- Research hydrologist/advisor with Waternet, 1990-2015.
- Advisor in projects with SWM (Surinam Water Company) 2006.
- Advisor in Bulk-Water Project Suriname with IMSA (Institute for Environmental System's Analysis, 2008)
- Advisor in Egypt between 1994-1998, regarding managed groundwater recharge to store Nile water for subsequent use.
- Advisor in Egypt 1999-2005, for Beheira Drinking and Wastewater Company. Improving groundwater management, salt groundwater management and removal of manganese and iron from groundwater.
- Joined University of Minnesota project building a groundwater model of Nevada (1995)
- (2008-2018) President of the Dutch Chapter of the International Association of Hydrogeologists.
- Modeling groundwater including developing models since 1973. Used Fortran (1970s), C (1980s), Matlab (1990s-2016), Python (2015-).
- Built the *mflab* software environment in Matlab (2008-2016) for modeling groundwater flow, transport with and without density. The environment interfaces with Modflow, MT3DMS and SEAWAT. The project was built for teaching and research used in many projects. mflab is public domain and available in sourceforge.org. Since 2016 switched to Python with USGS/Flopy and store work on github.com.

Hobbies

- Jogging, biking, roller skating, geology, groundwater, hydrology, modeling (currently Python), learning in general

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