Youwei **Wang**

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Molslaan 179, 2611 RL, Delft, the Netherlands
Born on 31 May 1990 in Weihai City, Shandong Province, China

Introduction I am a final-year Ph.D. candidate at Delft University of Technology, with main interests in **Fluvial sedimentology and cyclostratigraphy**.

Research Interest During my PhD, my main interest lies in four aspects : **Numerical forward modelling, Floodplain characterization, Channel sandstone description and classification, and Cyclostratigraphic analysis**.

Education Background

09/2016–Present	**PhD**, Applied Geology, *Delft University of Technology* Topic : "Astronomically controlled fluvial sedimentology and stratigraphy" *Supervisor : Dr. Hemmo Abels*, *Prof. Allard Martinius*
09/2013 –06/2016	**MSc**, Geological Resources and Geological Engineering, *China University of Petroleum (Beijing)* Topic : "Petroleum geology of the Sinian-Lower Paleozoic Sichuan Basin" *Supervisor :Prof. Xiongqi Pang*, **GPA** : 4.55/5.0 | **Rank** : 1/35
09/2009 –06/2013	**BSc**, Petroleum Geology, School of Earth Sciences, *China University of Petroleum (Beijing)* **GPA** : 4.1/5.0 | **Rank** : 1/160

Publications

- **Y. Wang**, T. F. Baars, J. E. A. Storms, A. W. Martinius, P. D. Gingerich, L. Lourens, H. A. Abels, "Variation of Fluvial Styles in a Climatically-Controlled Stratigraphy," in preparation.
  Fluvial styles | Sediment flux | Precession | Eccentricity | Sandstone body prediction
- **Y. Wang**, H. Sahoo, T. F. Baars, J. E. A. Storms, A. W. Martinius, P. D. Gingerich, H. A. Abels, "Characterization and classification of fluvial deposits in the lower Eocene Willwood Formation, Bighorn Basin, Wyoming, USA," in preparation.
  Channel sandstone body Characterization | Fluvial style | UAV model | Geomorphic zonation
- **Y. Wang**, T. F. Baars, J. E. A. Storms, A. W. Martinius, P. D. Gingerich, M. Chmielewska, S. Buckley, H. A. Abels, "Spatial characteristics and kinematics of precession-driven floodplain aggradational cycles in the lower Eocene Willwood Formation of the Bighorn Basin, Wyoming, USA," submitted to *Earth and Planetary Science Letters*.
  Precession | UAV model | Fluvial aggradation cycle | Compensational stacking | Bighorn Basin | Eocene
- **Y. Wang**, J. E. A. Storms, A. W. Martinius, D. Karssenberg, H. A. Abels, "Evaluating alluvial stratigraphic response to cyclic and non-cyclic upstream forcing through process-based alluvial architecture modelling," *Basin Research*, 33, pp.48–65,2021.
  Alluvial stratigraphy | Forward modelling | Compensational timescale | Precession | Signal preservation and shredding
- J. Zhang, Z. Jiang, H. Wu, T.F. Baars, **Y. Wang**, H.A. Abels (2021) *Precession-dominance of middle Eocene east Asian climate : implication for mudrock deposition and shale reservoir quality*, AAPG, under revision
- D. Chen, X. Pang, **Y. Wang**, Y. Dong, F. Jiang, L. Li, H. Pang, H. Bai, B. Pang, R. Qin, and H. Jiang (2019) *Palaeoenvironmental periodisms of middle Eocene terrestrial sediments in Bohai Bay Basin, eastern China, and their implications for organic matter accumulation*. Marine and Petroleum Geology, 112, 104060.
- H. Huang, W. Sun, W. Ji, R. Zhang, K. Du,S. Zhang, D. Ren, **Y. Wang**, L. Chen, X. Zhang (2018) *Effects of pore-throat structure on gas permeability in the tight sandstone reservoirs of the Upper Triassic Yanchang formation in the Western Ordos Basin, China*. Journal of Petroleum Science and Engineering, 162, 602–616.
- W. Peng, G. Hu, **Y. Wang**, D. Liu, Y. Lv, X. Luo (2018b) *Geochemical characteristics of light hydrocarbons and their influencing factors in natural gases of the Kuqa Depression, Tarim Basin, NW China*. Geological Journal, 53, 2863–2873.
- W. Peng, G. Hu, Z. Feng, D. Liu, **Y. Wang**, Y. Lv, R. Zhao (2018a) *Origin of Paleogene natural gases and discussion of abnormal carbon isotopic composition of heavy alkanes in the Liaohe Basin, NE China*. Marine and Petroleum Geology, 92, 670–684.

Conference Proceedings

- **Y. Wang**, T.F. Baars,J.E.A. Storms, A.W. Martinius, H.A. Abels.*Tracing paleosols in a UAV-based photogrammetry model of alluvial stratigraphy in the Bighorn Basin, Wyoming*, 35th IAS Meeting of Sedimentology, Prague, 2021.
- H.A. Abels, T.F. Baars, **Y. Wang**, A. Akeel, J.E.A.Storms, A. Martinus. *Implementing Orbital Climate Control on Alluvial Stratigraphy in Subsurface Predictive Models*, 82nd EAGE Annual Conference Exhibition, Amsterdam, 2020.
- H.A. Abels, **Y. Wang**, T.F. Baars, A. Alharbi, J.E.A. Storms, A.W. Martinius. *Precession-driven river avulsion cycles shaping alluvial architecture in the interaction with autogenic depositional controls*, IAS, Rome, 2019.
- H. Sahoo, **Y. Wang**, J.E.A. Storms, H.A. Abels, and A.W. Martinius. *Alluvial analysis of the Palaeocene-Eocene Thermal Maximum : Bighorn Basin, Wyoming, USA*. IAS, Rome, 2019.
- **Y. Wang**, J.E.A. Storms, D. Karssenberg, A.W. Martinius, H.A. Abels. *Numerical modeling of precession-driven deposition and erosion in alluvial settings : Analogue to the lower Eocene Willwood Formation of the Bighorn Basin, Wyoming, USA*. NAC, Utrecht,

2019.

- **Y. Wang**, H.A. Abels, J.E.A. Storms, A.W. Martinius. *Modelling orbital climate signals in fluvial stratigraphy*. ISC Quebec, Canada, 2018.
- **Y. Wang**, J.E.A. Storms, A.W. Martinius, D. Karssenberg, H.A. Abels. *Testing the impact of astronomical climate forcing on fluvial architecture in process-based numerical modelling*. IAS meeting, Toulouse, France, 2017.

Dataset

- **Y. Wang**, J.E.A. Storms, A.W. Martinius, D. Karssenberg, H.A. Abels, *Evaluating alluvial stratigraphic response to cyclic and non-cyclic upstream forcing through process-based alluvial architecture modelling*, 4TU Centre for Research Data, (2020).

Research Experience

Present – 05/2021 — **Fluvial response to PETM and significance to reservior exploitation, Rosebank, North Sea**

- Planned to do some catchment analysis (considering PACMod, Fastscape, pybadland);
- Planned to analyze core data, including isotope, thin section, XRD, and so on;
- Planned to characterize the sedimentology and stratigraphy and compare them with PETM boundary sandstone in the Bighorn Basin;
- Expected to offer suggestions for oil and gas exploration in the North Sea gas field.

Hyperthermal | Paleocene-Eocene | Provenance analysis | Sedimentology and Stratigraphy

05/2021 – 09/2019 — **Variation of fluvial styles in a climatically controlled stratigraphy, field survey coupling UAV-based photogrammetric model, Bighorn Basin**

- Observed and configured sandstone-floodplain contacts and related them to fluvial aggradational cycles (FACs);
- Located more than 100 sandstone bodies in the precession-level stratigraphy;
- Discovered the dominant occurrence of sinuous rivers in the high-amplitude precession cycles and braided rivers in low-amplitude cycles;
- Relate FAC properties (such as paleosol development and avulsion belt thickness) to different fluvial styles.

Precession | Eccentricity | Fluvial style | Paleoclimate

09/2020 – 09/2018 — **Channel sandstone characterization and classification, field survey coupling UAV-based photogrammetric model, Bighorn Basin**

- Characterized channel sandstone bodies in the field and recognized more sandstone bodies in the UAV model with field-gained experience;
- Classified sandstone bodies into four main categories : small distributary, sinuous, braided, and trunk channel deposits;
- Statistically compiled the 3-D dimension data of all styles;
- Illustrated a paleogeographic model that explained the regulation of river styles based on existing catchment information.

Channel sandstone description | Fluvial style | Geomorphic zonation

09/2019 – 09/2017 — **3-D characteristics of fluvial aggradational cycles, UAV photogrammetric model, Bighorn Basin**

- Prepared a 10 km^2 UAV-based DEM model covering a stratigraphy of ca. 300 m and spanning a period of ca. 0.9 Myr;
- Identified 44 FACs and traced their boundaries from 1-D trench sections;
- Characterized the 3-D consistency and variability of these FACs, and confirmed their maximum continuity in the paleoflow direction;
- Identified the compensational timescale at which allogenic and autogenic forcing interacts.

Precession | UAV model | Fluvial aggradational cycle | Compensentional timescale | Bighorn Basin | Eocene

09/2018 – 09/2016 — **Process-based numerical alluvial stratigraphic modelling, Python program, Karssenberg and Bridge (2008) model**

- Modelled alluvial response to orbital forcing of various amplitudes and wavelengths using the Karssenberg and Bridge (2008) model;
- Well reproduced precession-driven cycles in the Bighorn Basin that typically consists of an overbank phase and an avulsion phase;
- Demonstrated the important role of Qs/Qw ratio in determining fluvial aggradation and degradation;
- Illustrated favorable conditions for allogenic signal preservation : large amplitude and long (but not too long) wavelength.

Alluvial stratigraphy | Forward modelling | Compensational timescale | Precession | Signal preservation and shredding

Field Experiences

2019 One month in Bighorn Basin, Wyoming on fluvial deposits
2018 One month in Bighorn Basin, Wyoming on fluvial deposits
2017 One month in Bighorn Basin, Wyoming on fluvial deposits
2017 Two weeks in Ainsa Basin, Spain on fluvial and turbidite deposits
2015 Two months in Sichuan Basin, China on carbonate and shale
2010 One month in Beidaihe, China on tectonics and sedimentology

Software Skills

Programming : Python, Matlab, LaTeX, R
Illustrating : Illustrator, Photoshop, Coreldraw, Inkscape
Photogrammetry : Agisoft Metashape, Lime, VRGS, PTGui, Pix4D
Data analysis : ACycle, AnalySeries, GoCad, Petrel, Origin, CycLog, INPEFA

Language Proficiency

Chinese ●●●●● Native
English ●●●●○ TOEFL : 100/120 GRE : 323/345

Grants and Honors

2018 IAS/SEPM travel grants (€900)
2017 Dutch Molengraaff Fund (€2,000)
2015 Chinese National Scholarship (¥20,000)
2015 Third prize in the EAGE Field Challenge final (Spain)
2015 Young Scientist Award (Korea)
2014 Second Prize in SEG Challenge Bowl (China)
2013 Sun Yueqi Excellent Student Award (<0.5%)
2012 Second Prize in National English Contest (<1%)
2012 Second prize in the Chinese National Geological Contest (<1%)
2012 Li Siguang Excellent Student Award (6 students in China per year)

Interests

Sports : Running, Biking, Swimming, Hiking, Climbing, Badminton, Chess
Others : Reading, Traveling, Economy, Investment

Social Activities and Internship

Paper reviewing : Reviewer for Sedimentology and Petroleum Science
Student associations : Vice President of The Association of Chinese Students and Scholars in the Netherlands, 2019
Internship : RocOil (China), responsible for resource evaluation and bidding suggestions.

Referees

Dr. Hemmo Abels, *Delft University of Technology*
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