ZHIMIN YANG

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PROFESSIONAL SUMMARY

RESEARCH INTEREST

Ecological hydrology, River biogeochemical, River damming, Climate change, Cabon cycle, Risk assessment, Source apportionment

RELEVANT SKILLS

R language, ArcGIS, SWAT model, MIKE model

EDUCATION

Master of Hydrology and Water Resources — Beijing normal university, Beijing, China
GPA: 94.12/100 Rank: 1/24 — September 2021 – Now

Bachelor of Geographical Science — Hunan normal university, Changsha, China
GPA: 4.23/5.00 Rank: 1/84 — September 2017 – July 2021

EXPERIENCE

Roles of the stolon and erect grass species in surface-subsurface flow generation and red soil loss

- Surface-subsurface flow and soil loss in response to two grass species were revealed.
- Stolon grass was more effective than erect grass in reducing soil loss.
- Hydraulic and hydrodynamic characteristics were affected by various grass treatments.
- The above- and under-ground parts of grass contributed to controlling soil erosion.

Source-oriented ecological and resistome risks associated with geochemical enrichment of heavy metals in river sediments

- An multidisciplinary-based framework has been proposed for analyzing heavy metal (HM) risks.
- Apportionment results of PMF and Unmix models were similar and complementary.
- Industrial and agricultural sources were the main contributors of HM ecological risks.
- Diverse ARGs were identified and correlated with the geochemical enrichment of HMs.
- This work facilitates the progress of characterizing source-oriented risks of HMs.

A review of the global water resources under climate and land use changes in the past thirty years of research

- A bibliometric analysis was conducted to review the global water resources in a changing environment by using Citespace and R.
- The status, foci, trends, hotspots and challenges of this research area in the past thirty years were analyzed.
- “Carbon dioxide” served as an important clustering theme and burst keyword.
- The observations, monitoring and simulations of greenhouse gases were hotspots in water resources research

A novel method for the optimal allocation of dynamic water environment capacity (WEC)

- A fairness-based framework was proposed for the optimal allocation of WEC.
- The optimal allocation of WEC was obtained by minimizing the modified EGC.
- WEC exhibited an upward trend with the increase of the regulation level.
- The optimal allocation of WEC was realized at the strong regulation level.

A novel index-based method associated with aquatic ecosystem for evaluating river longitudinal connectivity (RLC)

- An index-based method associated with aquatic ecosystem was proposed to evaluate RLC.
- The changes of flow regime in cascade dams impacted the migratory and endemic fish.
- The downstream Tongzilin reservoir had the largest contribution to the loss of RLC.
- RLC was impacted by multiple factors especially cumulative effects in cascade dams.

PUBLICATIONS AND CONFERENCES

Yang, Z., Li, C., Liu, Y., Duan, J., Zhang, L., Li, Z., Zhou, X., Li, Q., Ma, Y., Tian, L., 2023. Roles of the stolon and erect grass species in surface–subsurface flow generation and red soil loss. **Journal of Hydrology**, 617, 128827.

Yang, Z., Li, C., Chen, H., Shan, X., Chen, J., Zhang, J., Liu, S., Liu, Q., Wang, X., 2023. Source-oriented ecological and resistome risks associated with geochemical enrichment of heavy metals in river sediments. **Chemosphere**, 336, 139119.

Yang, Z., Bu J., Li, C., Wang, X., Liu, Q., 2023. A novel index-based method associated with aquatic ecosystem for evaluating river longitudinal connectivity. **Ecological Indicators**. (Revision completed)

Yang, Z., Liu, S., Liu, L., Liu, Z., Wang, Y., Li, C., Yi, Y., Wang, X., Liu, Q., 2023. A review of the global water resources under climate and land use changes in the past thirty years of research. **Npj clean water**. (under review)

Yang, Z., Li, X., Li, C., Wang, J., Pu, Z., Wang, Y., Pi, C., Yi, Y., Wang, X., Liu, Q., 2023. A novel method for determining the optimal allocation of dynamic water environmental capacity. **Journal of Hydrology**. (under review)

Yang, Z., Han, L., Liu, Q., Li, C., Pan, Z., Xu, K., 2022. Spatial and temporal changes in wetland in Dongting Lake Basin of China under long time series from 1990 to 2020. **Sustainability**, 14(6), 3620.

Yang, Z., Yan, X., Tian, Y., Pu, Z., Wang, Y., Li, C., Yi, Y., Wang, X., Liu, Q., 2023. Risk assessment of sudden water pollution accidents associated with dangerous goods transportation on the cross-tributary bridges of Baiyangdian lake. **Water**. (Preprint)

Li, C., Wang, Y., **Yang, Z.**, Yi, Y., Wang, X., Liu, Q., Review of reservoir carbon cycle research: influence mechanism and research

methods. **Earth-Science Reviews**. (under review)