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Flow regime shifts the carbon-nitrogen coupling of dissolved organic nitrogen losses in a subtropical mountainous catchment

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Dissolved organic nitrogen (DON) is a kind of reactive nitrogen in the nitrogen cycling processes, which has been neglected for decades because of the difficulty in measurement, leading to underestimating the nitrogen saturation in the ecosystem. As a result, the need for a complete understanding of DON export behaviors is urgent. This study compares the DON export behaviors to previous studies, focusing on the relationship between DON, dissolved inorganic nitrogen (DIN), dissolved organic carbon (DOC), carbon-nitrogen coupling. We analyzed the data collected at the Fushan Experimental Forest (FEF) in northeastern Taiwan. Preliminary research results showed that (1) behaviors of DON export were unchanged between wet and dry seasons, but only switched at typhoon events, (2) the concentration of DOC was deficient in stream water, (3) unknown endmember between DON and DOC appeared at typhoon events, (4) the high bioavailability of DON occurred in soil and stream water, and (5) the concentration of DOC in soil pool was significantly higher than that of stream water. This study infers that typhoon disturbance appeared to alter the carbon limiting at FEF, causing the change of DON export patterns.