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Due to the invention of the optical frequency comb, dual-comb ranging has become a mature and powerful tool for metrology and industry. However, the low repetition rates of fiber combs limit the measurement speed, which is often at kHz level. Recently, chip-scaled soliton microcombs have improved the ranging speed beyond MHz, but there is still a challenge to realize octave soliton microcombs at microwave repetition rates for self-referenced frequency locking. Therefore, both the repetition rate fluctuation and the optical frequency instability have limited long-term ranging precision.

The image on the cover for *Advanced Photonics Nexus* Volume 3 Issue 4 illustrates a dual-hybrid-comb distance meter

capable of ultra-rapid and high-precision distance measurement. The hybrid approach can not only leverage the advantage of easy locking inherited from the fiber comb, but also sustain ultra-rapid measurement due to the microcomb. The results indicate the high coherence between the two types of combs with large repetition rate differences.

The image is based on original research presented in the article “[Rapid and precise distance measurement with hybrid comb lasers](#),” by Zhichuang Wang, Jiawen Zhi, Hanzhong Wu, Brent E. Little, Sai T. Chu, Jie Zhang, Zehuang Lu, Chenggang Shao, Weiqiang Wang, and Wenfu Zhang (doi 10.1117/1.APN.3.4.046006).