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4.4 Collation and transfer of time scales with sub-nanosecond accuracy by laser range and pseudo-range measurements

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The authors have examined operating principle, structure and technical characteristics of laser systems designed for high-precision collation and transfer of both on-board and ground time scales, presented methods of calibration for such laser systems and estimates of achievable accuracy of divergence between the time scales, examined experimental results of laser time transfer system performance under space flight conditions, suggested a conception of building a new generation all-weather laser station designed for precision transfer of the time scales by collation of simultaneous laser and radio pseudo-range measurement sessions performed earlier under the clear sky.