Publications by the LOFAR Lightning-Imaging group

- 2017
  - "Lightning Imaging with LOFAR"; Olaf Scholten, Stijn Buitink, Roxana Dina, et al., EPJ Web of Conferences 135, 03003 (2017) .pdf
- 2018
  - "LOFAR Lightning Imaging: Mapping Lightning With Nanosecond Precision"; B.M. Hare, et al., JGR-Atmosphere; 123 (2018) 2861-2876 .pdf
- 2019
  - "Needle-like structures discovered on positively charged lightning branches"; B.M. Hare, et al., Nature volume 568, pages 360-363 (2019) .pdf
    ; 17A-1
- 2020
  - "Radio Emission Reveals Inner Meter-Scale Structure of Negative Lightning Leader Steps"; B.M. Hare, et al., Phys. Rev. Lett. 124, 105101 (2020) .pdf
    Hare:2020; bursts $< 10\mu$s, 40 μs stepping time, absolute power estimate
- 2021
  - "The relationship of lightning radio pulse amplitudes and source altitudes as observed by LOFAR"; J.G.O. Machado et al., JGR: Earth and Space Science .pdf
    Machado:2021; 17A-1 & 18E-4;
  - "A distinct negative leader propagation mode"; Olaf Scholten et al., Scientific Reports 11, 16256 (2021) .pdf
    Scholten:2021-RNL; 19A-4 & 19A-5; IRNL, Magnetic loop, velocity
  - "Distinguishing features of high altitude negative leaders as observed with LOFAR"; Olaf Scholten et al., Atmospheric Research 260, (2021) 105688 .pdf
    Scholten:2021-HANL; 18F-1 & 20A-7 & 20A-8; HANL

- "The Initial Stage of Cloud Lightning Imaged in High-Resolution"; Olaf Scholten et al., JGR-Atmosphere; 126 (2021) e2020JD033126 .pdf
  Scholten:2021-init; 18E-4 & 19A-5; Impulsive imager, Magnetic loop, Time calibration technique
- "Time resolved 3D interferometric imaging of a section of a negative leader with LOFAR"; Olaf Scholten et al., Phys. Rev. D 104, 063022 (2021) .pdf
  Scholten:2021-INL; 19A-5 & 20A-7; TRI-D imager, Corona flash, gb units, power-law sources
- "Needle Propagation and Twinkling Characteristics"; Brian Hare et al., JGR-Atmosphere, 126 (2021) e2020JD034252 .pdf
  Hare:2021; 17A-1 & 19A-1; Needle structure, 5 ms between twinkles, silent positive leaders
- "The Spontaneous Nature of Lightning Initiation Revealed"; Chris Sterpka et al., Geoph. Res. Lett., 48 (2021) e2021GL095511 .pdf
  Sterpka:2021; 18D-1;
- "Implications of Multiple Corona Bursts in Lightning Processes for Radio Frequency Interferometer Observations"; Ningyu Liu et al., Geoph. Res. Lett., 48 (2021) e2021GL097367 .pdf
  Liu:2021;
- "Timing Calibration and Windowing Technique Comparison for Lightning Mapping Arrays"; Brian Hare et al., Earth and Space Science, 8, e2020EA001523 (2021) .pdf
  Hare:2021-LMA; LMA simulation

- 2022
  - "Interferometric imaging of intensely radiating negative leaders"; Olaf Scholten et al., Phys. Rev. D 105, 062007 (2022) .pdf
    Scholten:2022; 19A-5; TRI-D antenna function & polarization, simulate imaging accuracy, IRNL
  - "LOFAR observations of lightning Initial breakdown pulses"; Ningyu Liu et al., Geoph. Res. Lett., 49, e2022GL098073 (2022) .pdf
    Liu:2022; IBP
  - "Ultra-Slow Discharges That Precede Lightning Initiation"; Chris Sterpka et al., GRL 49, e2022GL101597 (2022) .pdf
    Sterpka:2022;

- 2023
  - "Characteristics of recoil leaders as observed by LOFAR"; Brian Hare et al., PRD 107, 023025 (2023)
    Hare:2023; 19A1
  - "Identifying Lightning Structures via Machine Learning"; Lingxiao Wang, Brian M. Hare, Kai Zhou, Horst Stöcker, and Olaf Scholten, Chaos, Solitons & Fractals 170, 113346 (2023). FIAS-news
    Wang:2023
  - "Small-Scale Discharges Observed Near the Top of a Thunderstorm"; O.Scholten, et al.,GRL 50, e2022GL101304 (2023).
    Scholten:2023; 21C
  - "Searching for intra-cloud positive leaders in VHF"; O.Scholten, et al.,Sci Rep 13, 14485 (2023).
    Scholten:2023PL;