Publications Rang A – période 2020-2026

28 publiées

Steichen, V., A. Piney, F. Leblanc, J.-J. Berthelier, C. Montaron, F. Ferreira, C. Dorland, Y. Inoue, N. Hong, J.-C. Matéo-Vélez, P. Henri, **A. Marchaudon** (2026), Prelude - Sat Electron Emitter (PSEE): A compact, low power electron emitter for planetary instrumentation, *Rev. Sci. Instrum.,* 97, 084501, https://doi.org/10.1063/5.0303523

Blelly, P.-L., J. F. Ripoll, A. Dubois, R. Horne, **A. Marchaudon** (2026), Ray tracing method in a general non-dipole magnetic field, *Journal of Geophysical Research: Space Physics*, https://doi.org/10.1029/2026ja035419

Resseguier, A., P.-L. Blelly, **A. Marchaudon** (2026), A new geomagnetic coordinate system: the Generalized Eccentric Dipole, *Journal of Geophysical Research: Space Physic,* https://doi.org/10.1029/2025ja034313

Gallardo-Lacourt, B., M. Grandin, **A. Marchaudon**, M. Barthélémy (2026), Unresolved Questions in Subauroral Science: Exploring Key Challenges in Physics and Chemistry, *Surveys in Geophysics*, https://link.springer.com/article/10.1007/s10712-026-09928-9

Geethakumari, G. P., A. T. Aikio, L. Cai, H. Vanhamäki, I. I. Virtanen, A. Coster, A. Maute, **A. Marchaudon**, P.-L. Blelly (2026), Role of Large-Scale Traveling Ionospheric Disturbances in the Positive Storm Phase Observed by the Millstone Hill Radar and GNSS TEC Measurements, *Journal of Geophysical Research: Space Physics*, https://doi.org/10.1029/2025ja034562

Nakamura, R., T. Dudok de Wit, G. H. Jones et al. (2025), Establishing a European Heliophysics Community (EHC), *Ann. Geophys.*, https://egusphere.copernicus.org/preprints/2025/egusphere-2025-3814.

Laundal, K. M., **A. Marchaudon**, A. Maute, S. M. Hatch, F. Enengl, T. Matsuo, M. Decotte, M. Madelaire, V. G. Merkin, A. Sciola, V. Haberle, A. S. Skeidsvoll (2025), Next generation data assimilation methods for polar ionospheric electrodynamics, Surveys in Geophysics, https://doi.org/10.1007/s10712-025-09918-3

Harvey, V. L., D. Aggarwal, E. Becker, M. Bittner, B. Funke, L. Goncharenko, J. Jia, R. Lieberman, H.-L. Liu, V. Maliniemi, **A. Marchaudon**, H. Nesse, N. Partamies, N. Pedatella, C. Schmidt, G. Shi, C. Stephan, G. Stober, W. Van Caspel, S. Wuest, Y. Yamazaki (2025), Signatures of Polar Vortex Weakening in the MLTI: A Review, Survey Geophysics, https://doi.org/10.1007/s10712-025-09899-3. *Workshop ISSI "Physical Links Between Weather and Climate in Space and the Lower Atmosphere".*

Santerne, A., H. Meheut, D. Barret, O. Berné, E. Berthier, A. Ducharne, J. Knödlseder, **A. Marchaudon**, T. Pellarin, A. Spiga, P. Wolf (2025), Towards sustainable space research in France, *Nature Astronomy*, 9, 472–473, https://doi.org/10.1038/s41550-025-02506-w.

Kieokaew, R., V. Haberle, **A. Marchaudon**, A. Chambodut, P.-L. Blelly (2025), Neural network modeling of geomagnetic baseline for ground magnetic measurements at mid-latitude, *Space Weather*, 23, e2024SW004192, https://doi.org/10.1029/2024SW004192.

Wahlund, J. E., J. E. S. Bergman, L. Åhlén, et al. (2025), The Radio & Plasma Wave Investigation (RPWI) for the JUpiter ICy moons Explorer (JUICE). Space Sci Rev 221, 1, https://doi.org/10.1007/s11214-024-01110-0

Belehaki, A., I. Häggström et al. (2025), PITHIA-NRF, Integrating plasmasphere, ionosphere and thermosphere observations and models into a standardised open access research environment: The PITHIA-NRF international project, Advances in Space Research, Volume 75, Issue 3, Pages 3082-3114, https://doi.org/10.1016/j.asr.2024.11.065.

Haberle, V., **A. Marchaudon**, A. Chambodut, P.-L. Blelly (2024), An Operational Geomagnetic Baseline Derivation Method for Magnetic Observatories located in Mid-Latitudes, *Space Weather*, 22, e2024SW004048, https://doi.org/10.1029/2024SW004048

Geethakumari, G. P., A. T. Aikio, L. Cai, H. Vanhamäki, I. I. Virtanen, A. Coster, **A. Marchaudon**, P.-L. Blelly, A. Maute, J. Norberg, S. Oyama, Y. Zhang, S. Chakraborty and B. Kunduri (2024), Total electron content variations during an HSS/SIR-driven geomagnetic storm at high and mid-latitudes, *Journal of Geophysical Research: Space Physics*, 129, e2024JA033192, https://doi.org/10.1029/2024JA033192

Ellahouny, N. M., A. Aikio, H. Vanhamäki, I. Virtanen, L. Cai, **A. Marchaudon**, P.-L. Blelly, A. Coster, J. Norberg, A. Maute, S.-I. Oyama (2024), EISCAT observations of depleted high-latitude F-region 2 during an HSS/SIR-driven magnetic storm, *Journal of Geophysical Research: Space Physics*, 129, e2024JA032910, https://doi.org/10.1029/2024JA032910.

Sarris, T. E., Tourgaidis S., et al. (2023), Daedalus MASE (mission assessment through simulation exercise): A toolset for analysis of in situ missions and for processing global circulation model outputs in the lower thermosphere-ionosphere., *Front. Astron. Space Sci.*, 9:1048318, https://doi.org/10.3389/fspas.2022.1048318.

Dahani, S., R. Kieokaew, V. Génot, B. Lavraud, Y. Chen, B. M. de Welle, N. Aunai, G. Toth, P. Cassak, N. Fargette, R. C. Fear, **A. Marchaudon**, D. Gershman, B. Giles, R. Torbert, and J. Burch (2022), The Helicity Sign of Flux Transfer Event Flux Ropes and its Relationship to the Guide Field and Hall Physics in Magnetic Reconnection at the Magnetopause, *Journal of Geophysical Research: Space Physics*, e2022JA030686. https://doi.org/10.1029/2022JA030686.

Rae, J., Forsyth, C. et al. (2022), What are the fundamental modes of energy transfer and partitioning in the coupled Magnetosphere-Ionosphere system?, *Experimental Astronomy,* Volume 54, pages 391–426, https://doi.org/10.1007/s10686-022-09861-w

Berngardt, O. I., St- Maurice, J.-P., Ruohoniemi, J. M., & **Marchaudon, A.** (2022). Seasonal and diurnal dynamics of radio noise for 8–20 MHz poleward-oriented mid-latitude radars. Radio Science, 57, e2021RS007338. https://doi.org/10.1029/2021RS007338.

Haberle, V., **Marchaudon, A.**, Chambodut, A., & Blelly, P.-L. (2022), Direct determination of geomagnetic baselines during quiet periods for low and mid-latitude observatories. *Journal of Geophysical Research: Space Physics*, 127, e2022JA030407. https://doi.org/10.1029/2022JA030407.

Wang, Y., M. Blanc et al. (2021), A preliminary study of Magnetosphere-Ionosphere-Thermosphere coupling at Jupiter: Juno multi-instrument measurements and modelling tools, *J. Geophys. Res. Space Physics,* https://doi.org/10.1029/2021JA029469.

Marcucci, M. F., I. Coco, S. Massetti, A. Pignalberi, V. Forsythe, M. Pezzopane, A. Koustov, S. Longo, D. Biondi, E. Simeoli, G. Consolini, M. Laurenza, **A. Marchaudon**, A. Satta, A. Cirioni, A. De Simone, A. Olivieri, A. Bau, A. Salvati (2021), Echo occurrence in the southern polar ionosphere for the SuperDARN Dome C East and Dome C North radars, *Polar Science*, 28, https://doi.org/10.1016/j.polar.2021.100684.

Chisham, G., A. G. Burrell, **A. Marchaudon**, S. G. Shepherd, E. G. Thomas, P. Ponomarenko (2021), Improving the geopositioning of SuperDARN echoes through interferometer calibration, *Polar Science*, 28, https://doi.org/10.1016/j.polar.2021.100638.

Palmroth, M., Grandin, M., Sarris, T., Doornbos, E., Tourgaidis, S., Aikio, A., Buchert, S., Clilverd, M., Dandouras, I., Heelis, R., Hoffmann, A., Ivchenko, N., Kervalishvili, G., Knudsen, D., Kotova, A., Liu, H.-L., Malaspina, D., March, G., **Marchaudon, A.,** Marghitu, O., Matsuo, T., Miloch, W., Moretto-Jørgensen, T., Mpaloukidis, D., Olsen, N., Papadakis, K., Pfaff, R., Pirnaris, P., Siemes, C., Stolle, C., Suni, J., van den Ijssel, J., Verronen, P.T., Visser, P., and Yamauchi, M. (2021), Lower thermosphere - ionosphere (LTI) quantities: Current status of measuring techniques and models, *Ann. Geophys.*, https://doi.org/10.5194/angeo-2020-42.

Kieokaew, R., B. Lavraud, N. Fargette, **A. Marchaudon**, V. Génot, C. Jacquey, D. Gershman, B. Giles, R. Torbert, J. Burch (2021), Statistical Relationship between Interplanetary Magnetic Field Conditions and the Helicity Sign of Flux Transfer Event Flux Ropes, *Geophys. Res. Lett*, https://doi.org/10.1029/2020GL091257.

Pitout, F., **A. Marchaudon**, K. Trattner, J. Berchem, H. Laakso, C. P. Escoubet (2020), Simultaneous Polar and Cluster observations in the northern and southern mid-altitude polar cusps around equinox, *J. Geophys. Res. Space Physics*, https://doi.org/10.1029/2020JA028346.

Poedts S. et al., EUropean Heliospheric FORecasting Information Asset 2.0 (2020), *Journal of Space Weather and Space Climate*, 10, 57, https://doi.org/10.1051/swsc/2020055.

Marchaudon, A. and P.-L. Blelly (2020), Impact of the dipole tilt angle on the ionospheric plasma as modeled with IPIM, *J. Geophys. Res. Space Physics*, 125, https://doi.org/10.1029/2019JA027672.

Conférences invitées – période 2020-2026

Marchaudon, A., How are environmental issues discussed and addressed by the French astronomy community?, *ESLAB + "Heliophysics in Europe 3" Workshop*, Leiden, Pays-Bas, Septembre 2026.

Marchaudon, A., French astrophysics and space physics community Prospective exercises (online), *European Space Weather Week 2024*, Coimbra, Portugal, Novembre 2024.

Marchaudon A., How can the effects of the middle atmosphere be taken into account to model the ionosphere accurately?, *ISSI Workshop "Physical Links Between Weather and Climate in Space and the Lower Atmosphere"*, Berne, Suisse, Janvier 2024.

Marchaudon, A., Ground-based efforts toward a better description of the ionosphere-thermosphere system and a better assimilation of data in first-principle models, *Royal Astronomical Society's Specialist Discussion Meeting Global Monitoring of Geospace*, Meeting en ligne, Janvier 2022.

Marchaudon, A., Overview of the equatorial electrodynamics at Earth, *Royal Astronomical Society Meeting: Comparative Equatorial Thermosphere-Ionosphere-Magnetosphere*, Meeting en ligne, Février 2021.

Publications sans comité de lecture – 2020-2026

Marchaudon, A., and P.-L. Blelly (2024), Understanding the near-Earth space environment: a challenge for both solar-terrestrial relations and coupling with the lower atmosphere, SF2A-2024: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics. Eds.: M. Béthermin, K. Baillié, N. Lagarde, J. Malzac, R.-M. Ouazzani, J. Richard, O. Venot, A. Siebert (eds), meeting à Marseille, France, 4-7 Juin 2024, p. 27-32 https://ui.adsabs.harvard.edu/abs/2024sf2a.conf...27M.

Sarris, T., et al. (2023), Plasma-Neutral Interactions in the Lower Thermosphere-Ionosphere: The need for in situ measurements to address focused questions*, Whitepaper #351 in the Decadal Survey for Solar and Space Physics (Heliophysics) 2024-2033*. Main topics: basic research. Additional topics: planetary ionospheres/upper atmospheres; space-based missions/projects, https://doi.org/10.3847/25c2cfeb.ad2e5fe9.

Rae, J. et al. (2020), What are the fundamental modes of energy transfer and partitioning in the coupled Magnetosphere-Ionosphere system?, *European Space Agency's "Call for White Papers for the Voyage 2050 long-term plan in the ESA Science Programme".*

Communications nationales et internationales (1ère autrice) – 2020-2026

Marchaudon, A., Comprendre l'environnement spatial proche de la Terre : enjeu aussi bien pour les relations Soleil-Terre que pour les couplages avec la basse atmosphère, *Session plénière du Colloque de la SF2A*, Marseille, France, Juin 2024.

Marchaudon, A., P.-L. Blelly, F. Pitout, J. Eisenbeis, S. Thomas, Importance de la composante thermosphérique dans la dynamique du couplage ionosphère-magnétosphère : impact pour la Météorologie de l'Espace, *Colloque du PNST*, Marseille, France, Mai 2022.

Marchaudon, A., P.-L. Blelly, F. Pitout, L. Noguès, H.C. Séran, L. Bautista, A. Resseguier, Installations ionosphériques HF françaises : état du radar SuperDARn de Kerguelen et installation d'une ionosonde au Centre de Recherche Atmosphérique de Lannemezan, *Colloque de prospective du PNST*, Marseille, France, Janvier 2024. (poster)

Marchaudon A., P.-L. Blelly, A. Aikio, A. Maute, S. Thomas, J. Eisenbeis, Applications du modèle IPIM aux événements intenses : éjections de masse coronale (CME) et régions d'interaction en corotation (CIR), *Colloque de prospective du PNST*, Marseille, France, Janvier 2024. (poster)

Marchaudon, A., P.-L. Blelly, F. Pitout, L. Noguès, H.C. Séran, L. Bautista, A. Resseguier, French HF ionospheric facilities: SuperDARN radar and Ionosonde, *European Space Weather Week 2023*, Toulouse, Novembre, 2023. (poster)

Communications internationales et nationales (jeunes chercheurs encadrés) – 2020-2026

Resseguier, A., P.-L. Blelly, **A. Marchaudon,** Modeling the high-latitude MIT system with the IPIM model, *Colloque de l'ATST*, Biarritz, France, Juin 2026.

Gonnet, A., N. André, **A. Marchaudon**, M. Rojo, V. Réville, J.-B. Dakyéo, E. Vellard, I. Plotnikov, P. Garnier, Constraining Solar Structure Propagation in the Heliosphere: A Multipoint Approach, *Colloque de l'ATST*, Biarritz, France, Juin 2026. (poster)

Kacem, I., P.-L. Blelly and **A. Marchaudon**, Reconstruction of ionospheric electron density profiles with the Lannemezan ionosonde, *Colloque de l'ATST*, Biarritz, France, Juin 2026. (poster)

Resseguier, A., P.-L. Blelly, **A. Marchaudon,** Modeling the high-latitude MIT system with the IPIM model, *EGU General Assembly*, Avril 2026.

Resseguier, A., P.-L. Blelly, **A. Marchaudon**, Implementation of a low and mid-latitudes electrodynamical module in the IRAP Plasmasphere-Ionosphere Model (IPIM), *European Space Weather Week 2025*, Oumea, Suède, Novembre, 2025. (poster)

Resseguier, A., P.-L. Blelly, **A. Marchaudon**, Implementation of a low and mid-latitudes electrodynamical module in the IRAP Plasmasphere-Ionosphere Model (IPIM), *Colloque de la SF2A*, Toulouse, France, Juin 2025. (poster)

Resseguier, A., P.-L. Blelly, **A. Marchaudon**, Implementation of a low and mid-latitudes electrodynamical module in the IRAP Plasmasphere-Ionosphere Model (IPIM), *EGU General Assembly 2*024, Vienne, Autriche, Avril 2025. (poster)

Haberle, V., **Marchaudon, A.**, Chambodut, A., and Blelly, P.-L.: An operational geomagnetic baseline derivation for ground magnetometer data located in mid-latitudinal regions, *EGU General Assembly 2*024, Vienne, Autriche, Avril 2024. (poster)

Kieokaew, R., V. Haberle, **A. Marchaudon**, A. Chambodut, P.-L. Blelly, Neural network modeling of the ground magnetic perturbation at mid-latitude: towards future application of geomagnetic storm prediction, *European Space Weather Week 2023*, Toulouse, Novembre 2023.

Haberle, V., **Marchaudon, A.**, Chambodut, A., and Blelly, P.-L.: Extraction of solar forcing signatures in ground magnetometer data from sub-auroral regions, *EGU General Assembly 2*023, Vienne, Autriche, Avril 2023. (poster)

Haberle, V., **A. Marchaudon**, A. Chambodut, P.-L. Blelly, Extraction of ground magnetic signatures from solar quiet current systems in sub-auroral regions, *EGU General Assembly*, Avril 2022.

Eisenbeis, J., P.-L. Blelly, S. R. Thomas, **A. Marchaudon**, Modeling horizontal currents and magnetic ground perturbations with the IPIM model, *EGU General Assembly*, Avril 2022.

Thomas, S. R., S. Bird, P.-L. Blelly, **A. Marchaudon**, J. Eisenbeis, Using IPIM to Simulate the Ionosphere's Response to Extreme Space Weather, *EGU General Assembly*, Avril 2022.

Eisenbeis, J., P.-L. Blelly, S. R. Thomas, **A. Marchaudon**, Modeling horizontal currents and ground induced currents with the IPIM model, *AGU Fall Meeting*, Décembre 2021.

Thomas, S. R., P.-L. Blelly, **A. Marchaudon**, J. Eisenbeis, S. Bird, Applying Solar Wind Observations to the IPIM Ionospheric Model, *AGU Fall Meeting*, Décembre 2021.

Haberle, V., **A. Marchaudon**, A. Chambodut, P.-L. Blelly, Local diurnal variations of the geomagnetic field during magnetically quiet conditions, *EGU General Assembly*, Avril 2021.

Thomas, S. R., P.-L. Blelly, **A. Marchaudon**, J. Eisenbeis, S. Bird, Applying Solar Wind Observations to the IPIM Ionospheric Model, *EGU General Assembly*, Avril 2021.