

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/43072> holds various files of this Leiden University dissertation.

**Author:** Morabito, L.K.

**Title:** Radio galaxies at low frequencies: high spatial and spectral resolution studies with LOFAR

**Issue Date:** 2016-09-13

**Radio Galaxies at Low Frequencies**

high spatial and spectral resolutions studies with LOFAR

---

1. Low frequency surveys provide support for orientation-based unification schemes of active galactic nuclei. (*Chapter 2*)
2. Sub-arcsecond imaging at 55 MHz shows that high redshift radio galaxies are analogues of their low redshift equivalents. (*Chapter 3*)
3. The correlation between radio spectral index and redshift can be entirely explained by inverse Compton losses from the increased magnetic field energy density at higher redshift. (*Chapter 4*)
4. Low-frequency carbon radio recombination lines can be observed in extragalactic sources. (*Chapter 5*)
5. Comparison of models with measurements of carbon radio recombination lines across a range of frequencies can be used to constrain the properties of the cold diffuse medium in extragalactic sources. (*Chapter 6*)
6. Bound-bound Gaunt factors can be calculated with high accuracy for arbitrarily large quantum numbers using modern computing techniques. (*Chapter 7*)
7. The efforts of calibration of ultra low frequency radio data will be rewarded with discoveries that will revolutionise radio astronomy.
8. The approach taken in calibrating data depends ultimately on the science goals of the project, and ‘perfect’ calibration is relative.
9. The focus on quantity over quality in publishing papers in astronomy is detrimental to the field.
10. Specializing in one particular portion of the electromagnetic spectrum provides too narrow a view of the Universe.
11. No matter what your successes are, it is impossible to be truly happy unless you have passion for what you do.
12. Travelling alone is something that everyone should do regularly.
13. People are more tolerant and compassionate when they have been exposed to different cultures, ideas, and people from varied backgrounds.
14. Positive discrimination in hiring is necessary until there is a representative balance of women and minorities at the highest levels of any organisation.