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## **The colours of the extreme universe**

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**Stellingen**  
**behorende bij het proefschrift**  
*The Colours of the Extreme Universe*

1. Fitting of integrated photometry using AGN and galaxy SED models reliably identifies nuclear properties, such as AGN obscuration, despite the different scales probed. (Chapter 2)
2. The infrared-radio correlation at low and high radio frequencies evolves as a function of redshift. (Chapter 3)
3. The radio SEDs of AGN and star forming galaxies have different curvatures and highlight the diagnostic potential of the radio spectrum. (Chapter 3)
4. The different sizes observed for ISM tracers such as CO, [CII] and dust continuum (Chapter 4 and 5), indicate that assuming a single size for these tracers can introduce biases when determining the properties of the ISM.
5. The observed compactness of dust continuum emission at high redshift can be explained by a combination of optical depth and temperature gradients. (Chapter 4)
6. The most meaningful contribution of ALMA for extragalactic astronomy is a new perspective into galaxy evolution by providing insight into the raw material instead of the products of galaxy and black hole growth.
7. Regarding galaxy evolution studies, the infrared-to-optical and the radio communities would both significantly benefit from collaborating and integrating with each other more often.
8. Fast-science, as the most valued skill in the current system of academia, increments the noise in scientific results and discourages usually time-consuming in-depth studies.
9. Undergraduate intellectual challenges like exams are to athletic sprints what the PhD is to a marathon, where endurance is more important than Eureka moments.
10. Learning languages not only allows you to communicate with people, but opens windows to understanding the thinking structure and the social priorities of the speakers.
11. Happy scientists are better scientists.

Gabriela Callstro Rivera,  
Leiden, January 2019