

## **Positivity and the Joint Spectral Radius**

Fabian Wirth

Hamilton Institute, NUI Maynooth

### **Abstract**

The joint spectral radius of a set of matrices is the maximal growth rate of matrix products, that can be formed using matrices from the set. In the irreducible case we can associate so-called extremal norms to the set, which characterize the joint spectral radius. These norms form a closed pointed convex cone in a suitable Banach space. We will discuss positivity with respect to this cone and some implications regarding the joint spectral radius.

In the case that the set of matrices is positive the situation is much simpler than in the general case. In particular, the spectral theory of the associated linear inclusion is simplified in several aspects.