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Large scale pattern modulation and local processes in self-organised semi-arid vegetations

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We will review the growing body of empirical evidence supporting or opposing the mechanistic hypotheses and predictions of self-organisation models applied to the case of spatially periodic vegetation patterns found in semi-arid and arid areas around hot deserts. At system scale, emphasis will be put on spatial and temporal pattern dynamics, and in particular pattern emergence and modulation along environmental gradients, as well as banded pattern migration. At local scale, the available information on processes, such as positive and negative plant-resource feedbacks will be discussed. Overall, remarkable qualitative –and sometime quantitative- agreement is found between the rich theoretical framework and the results of field and remotely sensed investigations.