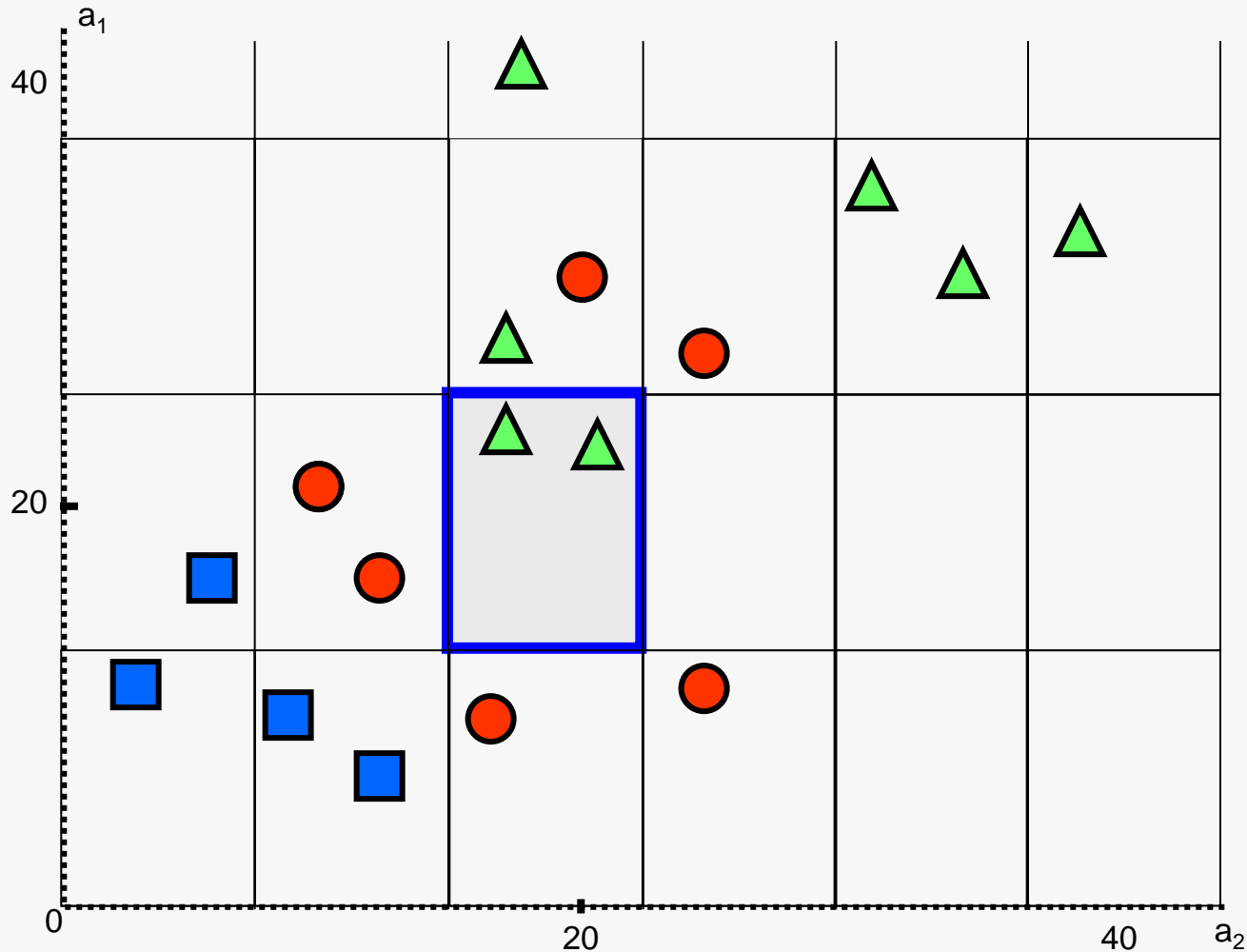


- Rough set understanding of granular computing:
- Granules are **blocks of knowledge** used for :
  - **approximation** of concepts (sets)
  - representation of concepts in terms of **rules**

# Rough set understanding of granular computing

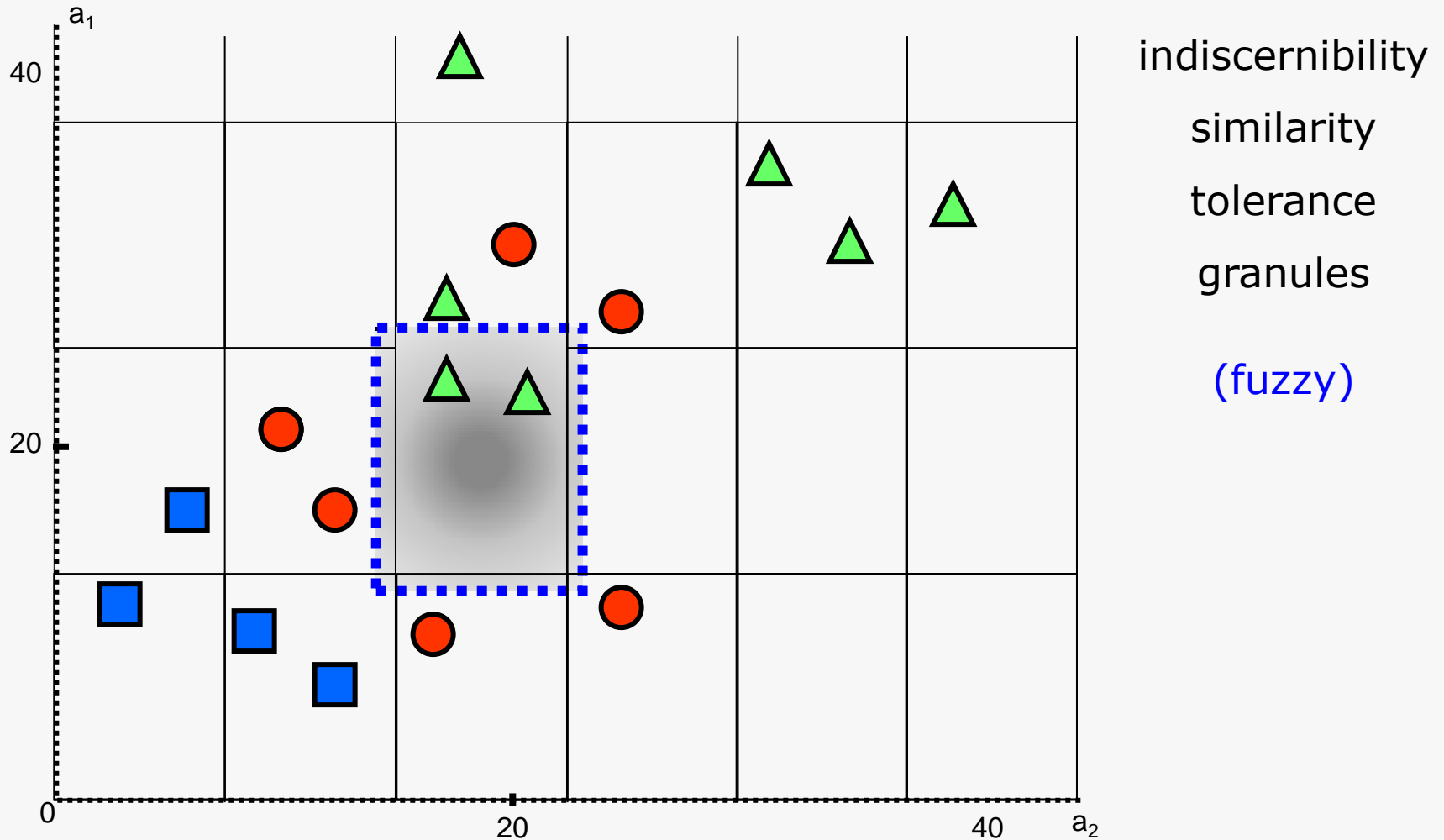
- Granules are **not necessarily bounded sets**



indiscernibility  
similarity  
tolerance  
granules  
(crisp)

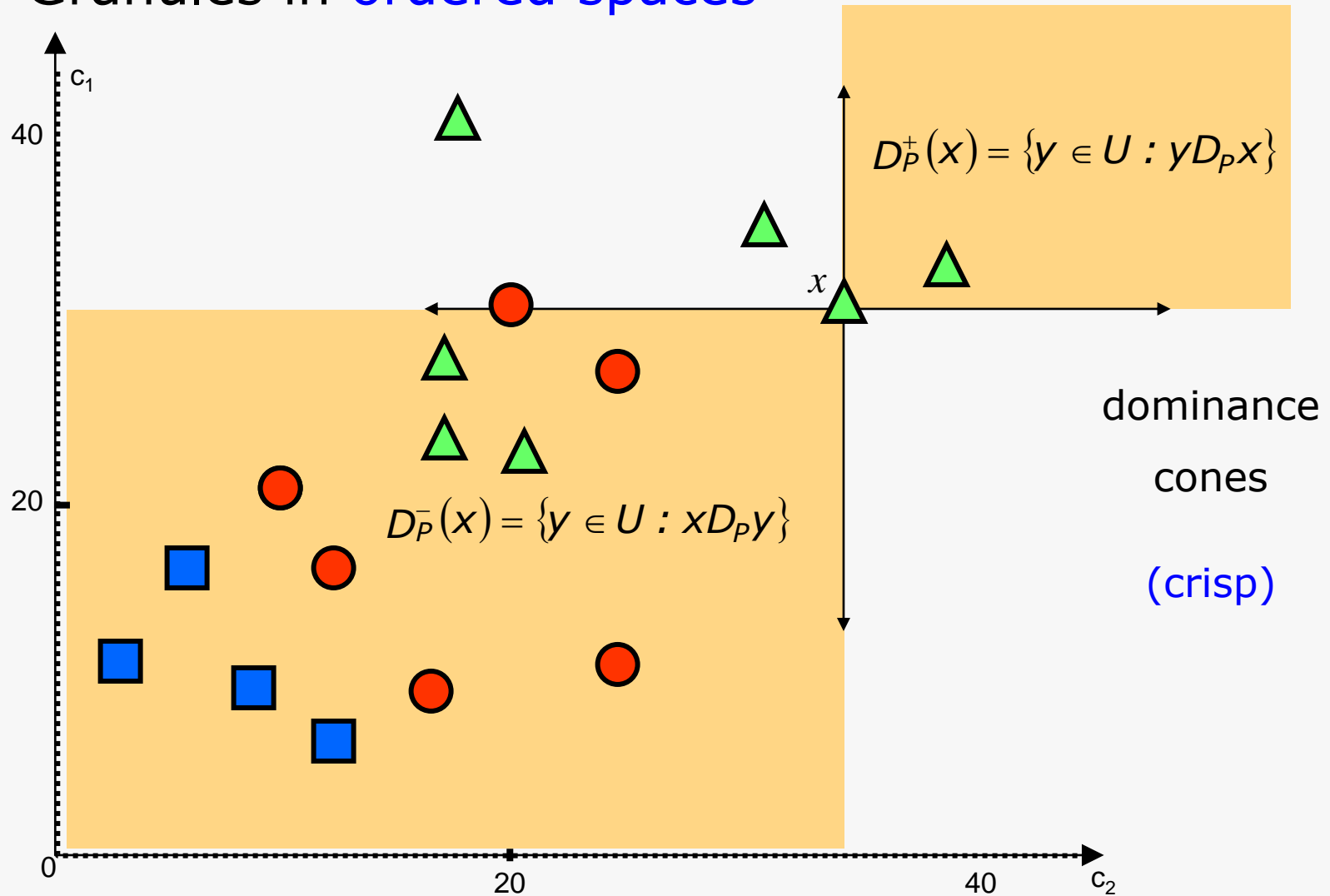
# Rough set understanding of granular computing

- Granules are **not necessarily bounded sets**



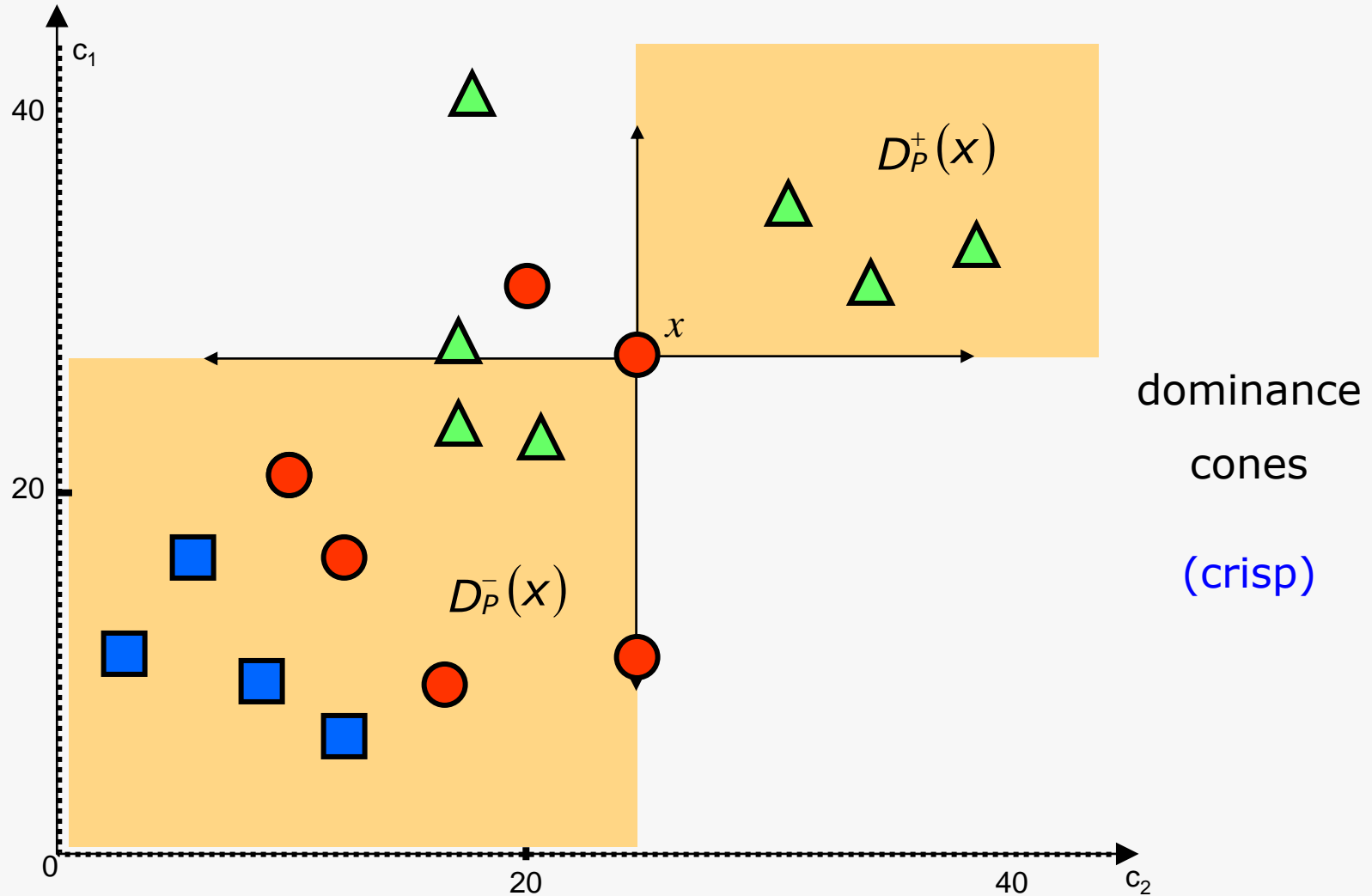
# Rough set understanding of granular computing

## ■ Granules in ordered spaces



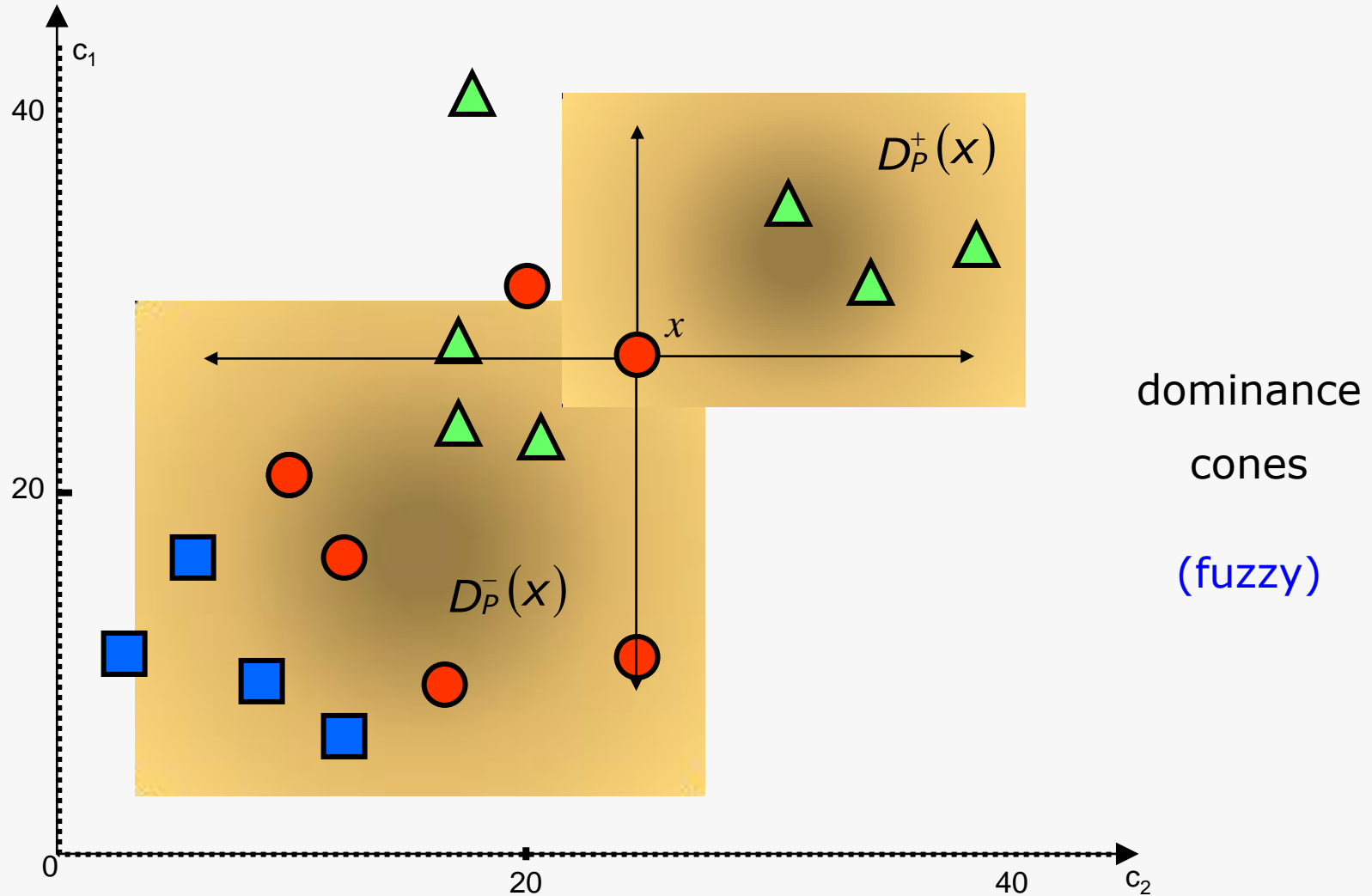
# Rough set understanding of granular computing

## ■ Granules in ordered spaces



# Rough set understanding of granular computing

## ■ Granules in ordered spaces



## Rough set understanding of granular computing

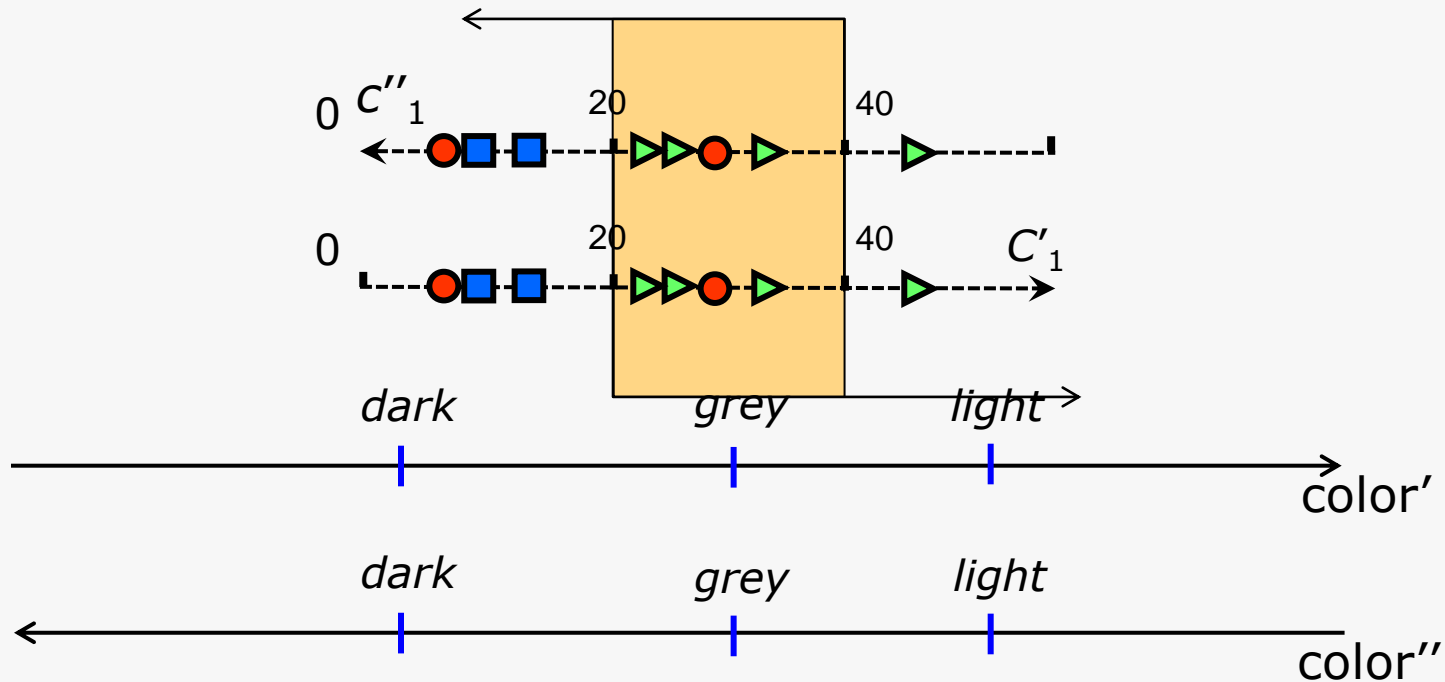
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- Obviously, **not all** spaces are ordered!
- However, **dominance cones** are useful even then



# Rough set understanding of granular computing

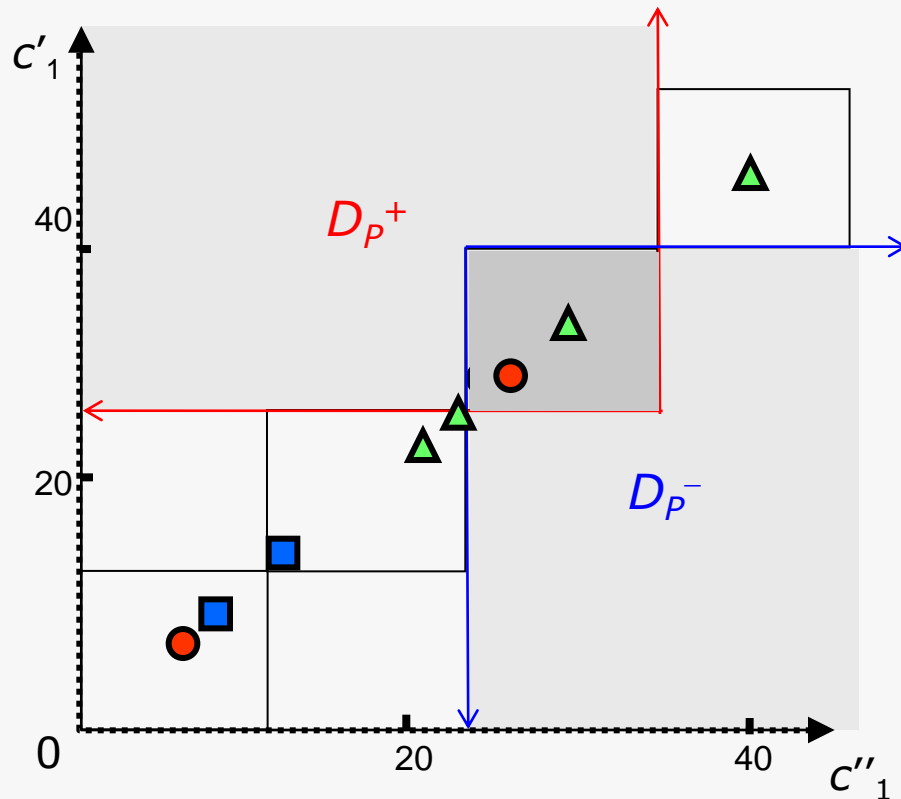
- Obviously, **not all** spaces are ordered!
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# Rough set understanding of granular computing

- Obviously, **not all** spaces are ordered!
- However, **dominance cones** are useful even then



## Rough set understanding of granular computing

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- Granular expression of decision rules

***If price  $\geq 10.600\$$  & color  $\in \{\text{dark, grey}\}$   
& size  $\in \{\text{normal, large}\}$ , then choice is **yes*****

- Semantically meaningful and justifiable
- Granules are not necessarily numerical

J. Błaszczyszki, S. Greco, R. Słowiński: Inductive discovery of laws using monotonic rules. *Engineering Applications of Artificial Intelligence*, 2011 (to appear)