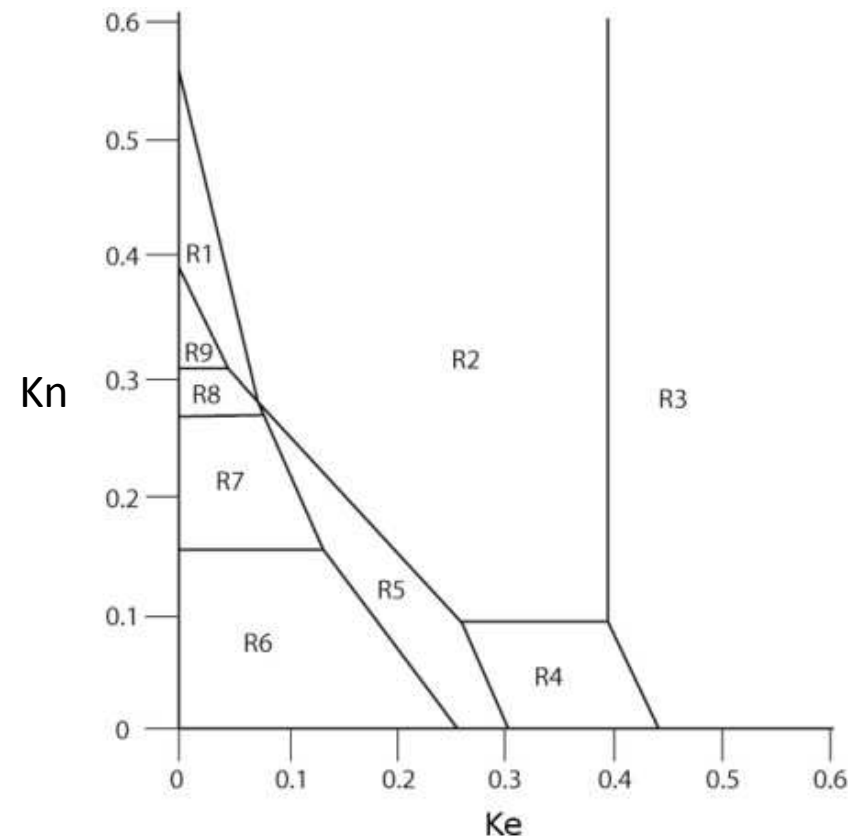


# Exploration of the labelling Space given Graph Edit Costs

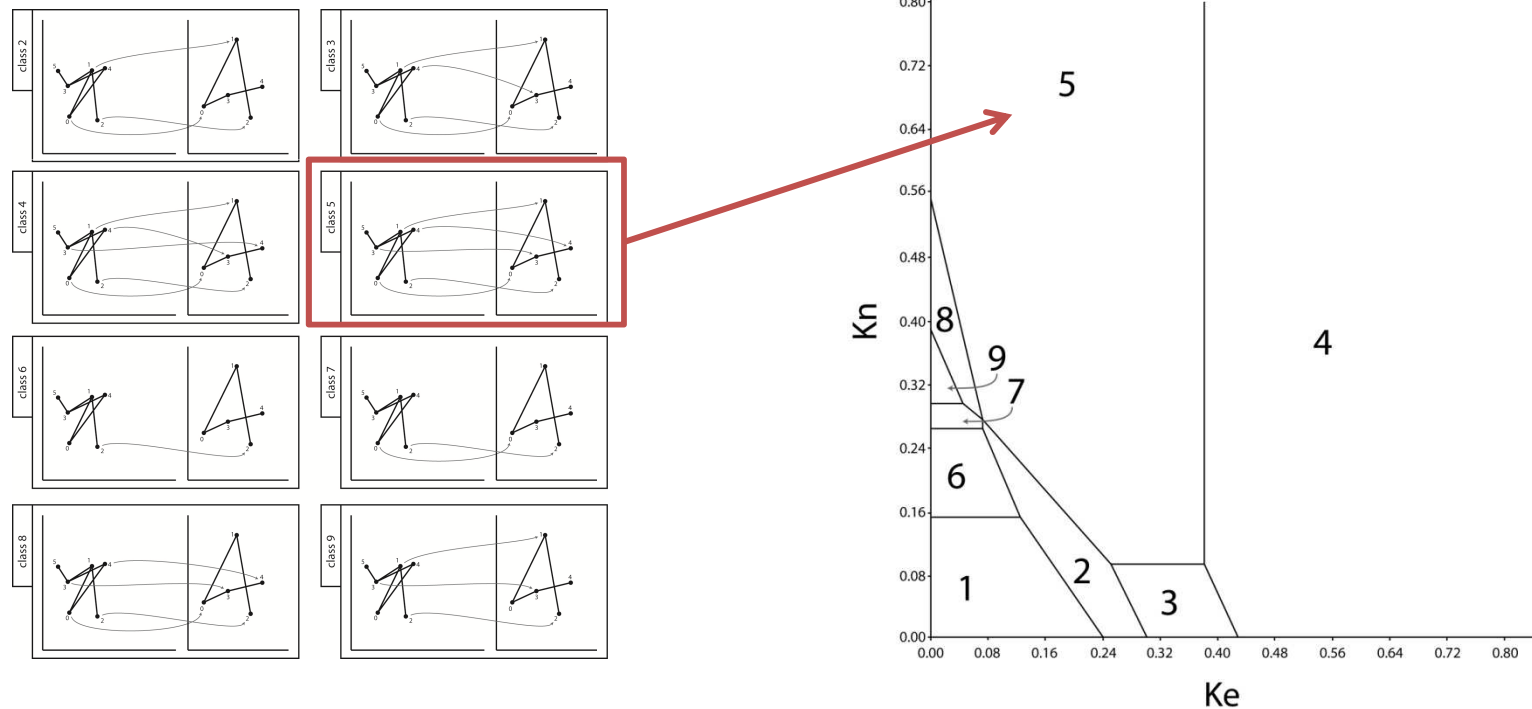
## Exploration of the labelling Space given Graph Edit Costs

- We propose a method to compute the possible labellings we can obtain (*using an optimal graph matching algorithm*) varying the Graph Edit Constants
- $K_n$  -> node ins./del.
- $K_e$  -> edge ins./del.



# Exploration of the labelling Space given Graph Edit Costs

- Proposition 1: Given two graphs  $G^1$  and  $G^2$ , any region composed by the values  $\{K_n, K_e\}$  where GED minimize at the same bijection  $t$  form a convex polygon.



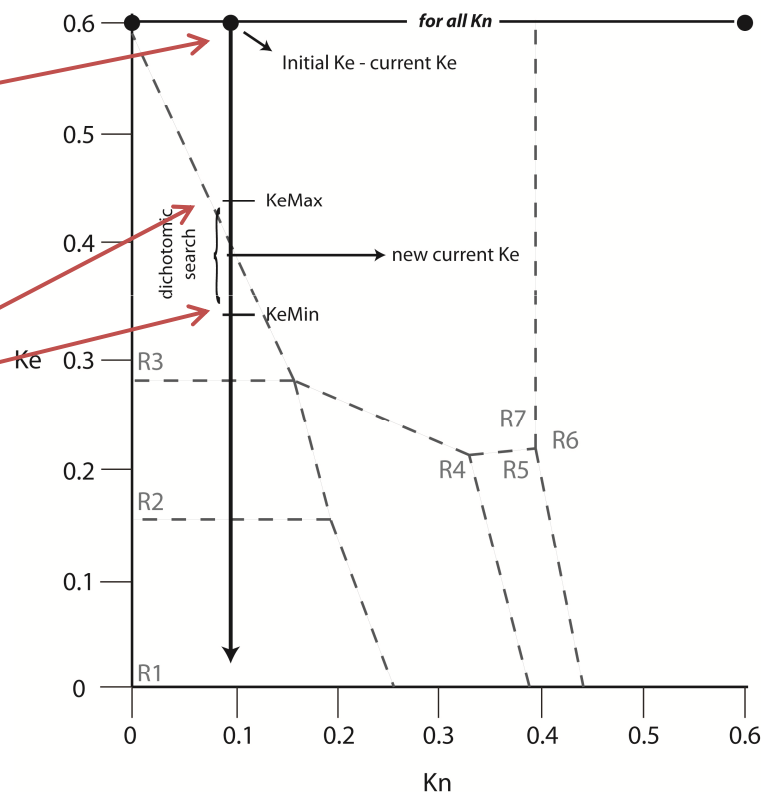
# Exploration of the labelling Space given Graph Edit Costs

- Algorithm proposal.

**1.** Given an optimal bijection computed with a concrete  $K_n$  and  $K_e$  value.

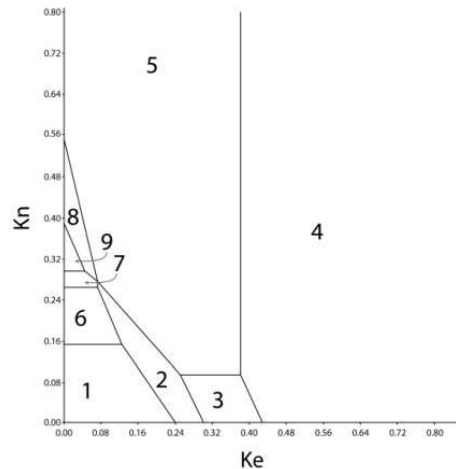
**2.** Two heuristic functions help to compute the next bijection border.

**3.** Exact border is searched using a dichotomic search.



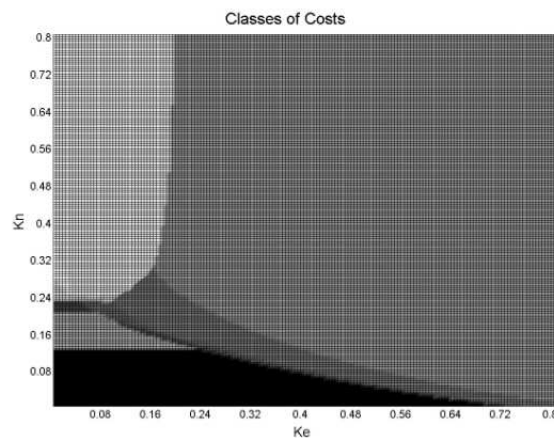
# Exploration of the labelling Space given Graph Edit Costs

Results and comparison with a sub-optimal algorithm.



## Optimal

- % done computations = 10.1 %
- mean number of labellings = 6.5



## Suboptimal (Graduated Assignment)

- % done error = 20.4
- mean number of labelings = 10.1