

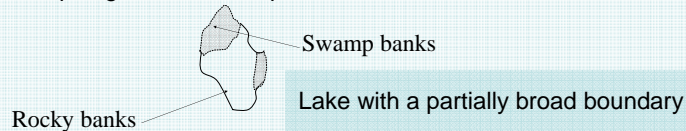


Context : Lack of reliability of spatial data when the imperfection of spatial information is ill-described

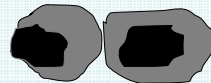
Keywords: shape vagueness, topological integrity constraints, vertical integration, Spatial OCL

Problem scope:

-Representation of objects with vague shapes and identification of their topological relationships

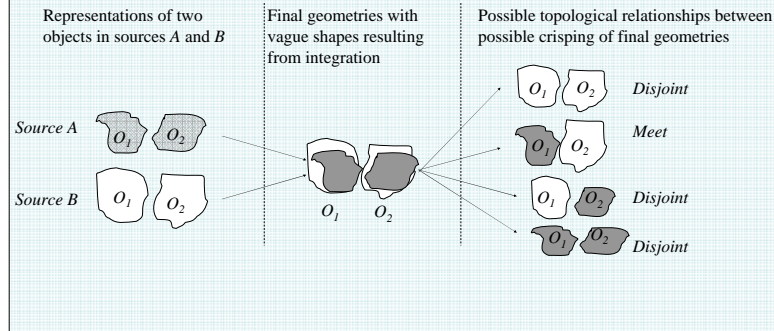


-Specification of topological integrity constraints involving objects with vague shapes



How is-it possible to express this relationship??

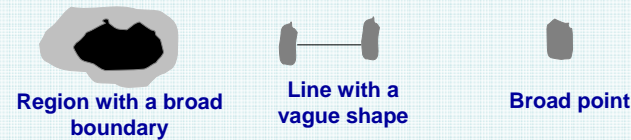
-Uncertainty about appropriate topological relationships between geometries with vague shapes resulting from a vertical integration



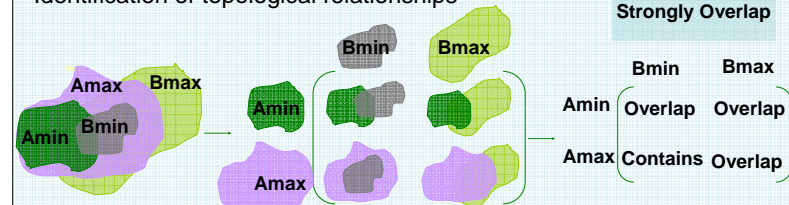
Approach and main results:

Representation of objects with vague shapes

→ Object with a vague shape $A = A_{max}$ includes A_{min}

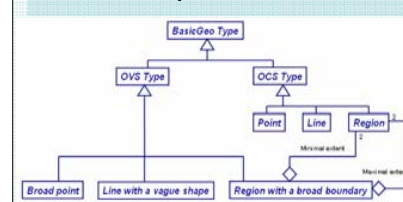


Identification of topological relationships

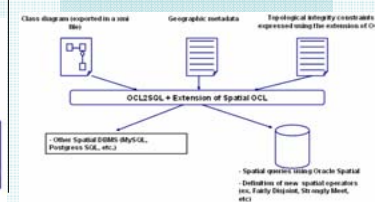


Specification of topological integrity constraints

Extension of Spatial OCL meta-model



Implementation



Specific objectives :

- To Represent spatial objects having **different levels of shape vagueness** and to identify their topological relationships
- To specify topological integrity constraints involving objects with vague shapes
- To reduce the vagueness of **topological relationships** for geometries with vague shapes resulting from a vertical integration

Conclusions

- 1- Representation of objects with different levels of shape vagueness
- 2- Identification and classification of topological relationships using a simple and intuitive approach
- 3- Using the spatial model to specify topological integrity constraints
- 4- Application of the model to reduce the vagueness of topological relationships in a vertical integration
- 5- Implementation of the approach using existing Spatial DBMS