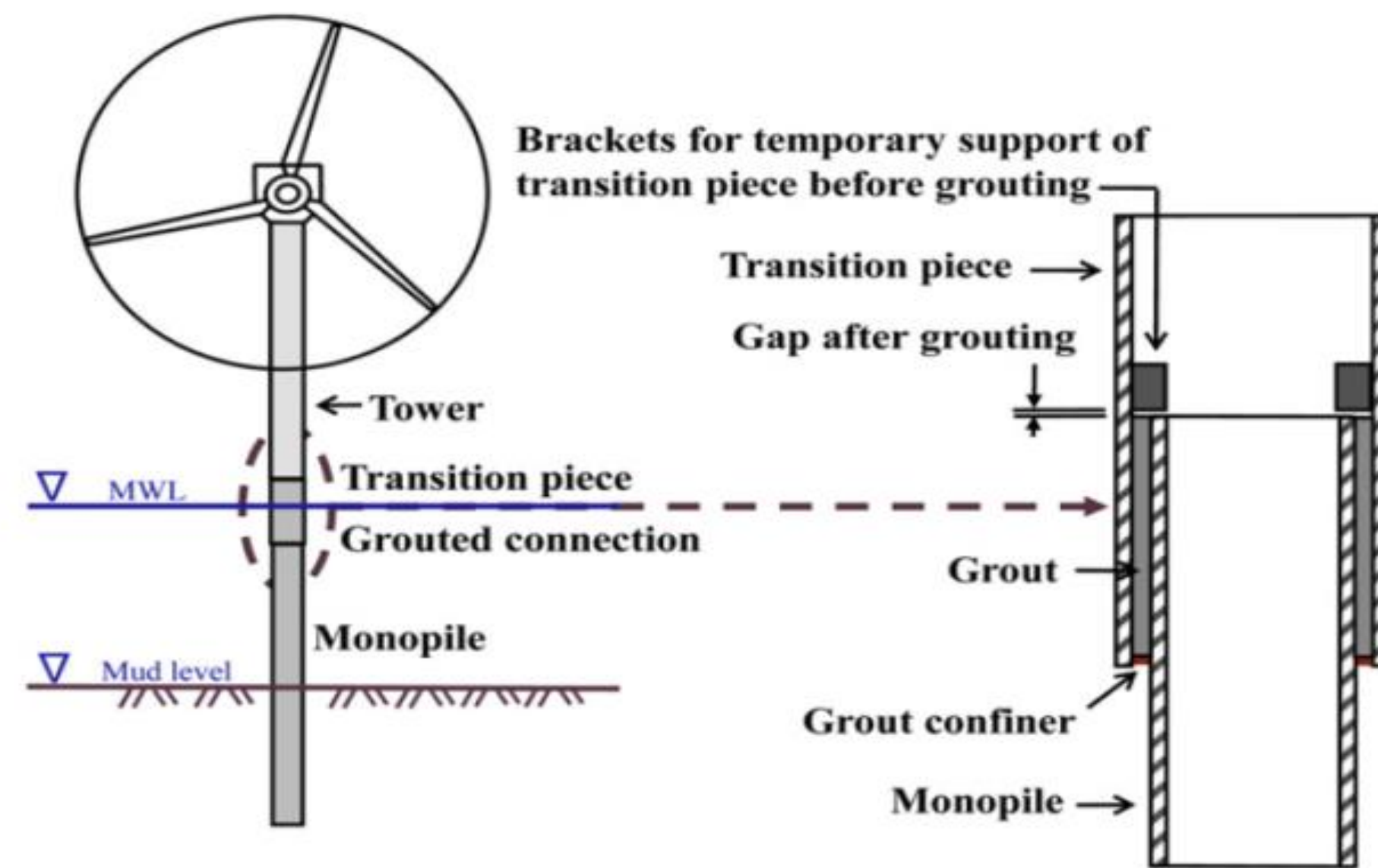


Fracture mechanics approach to probabilistic inspection planning of offshore foundation structures for wind turbines.



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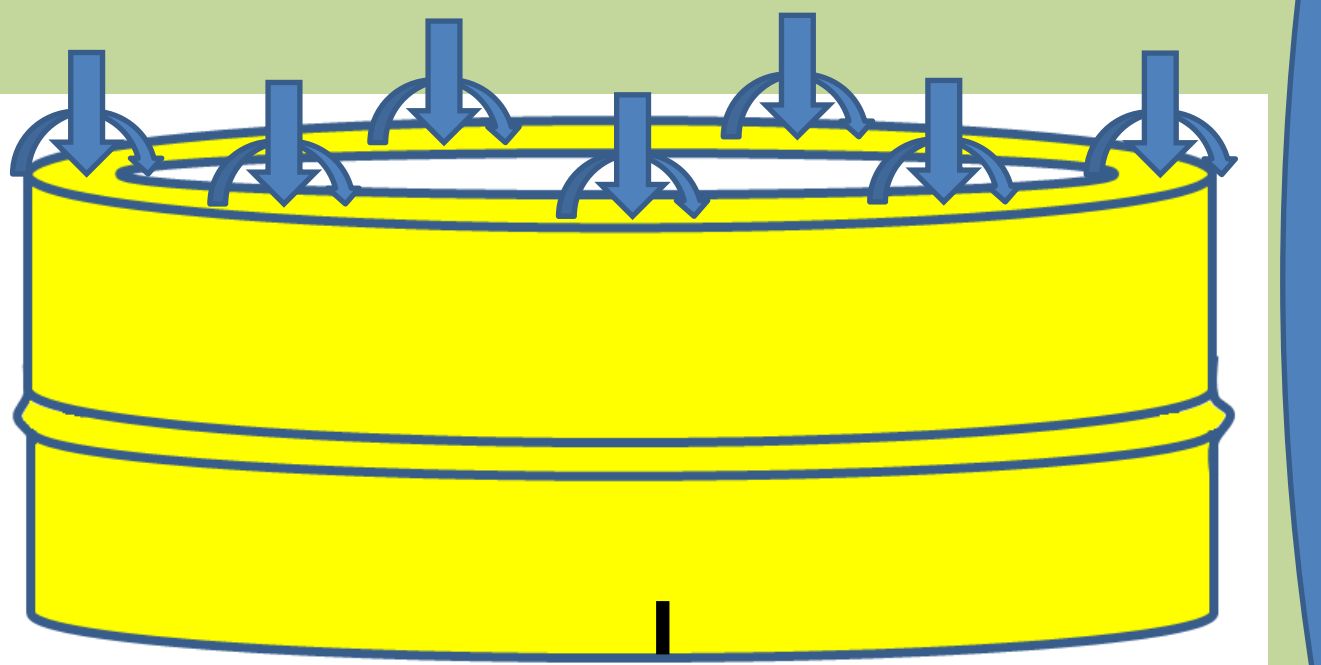
- TP supported by stoppers.
- Internal corrosion.
- Uncertainty knowledge of welds characteristics.
- Certainty knowledge of load distribution.

WELDS ON TRANSITION PIECE:

- Hypothetical case.
- FEM and Reliability analysis.

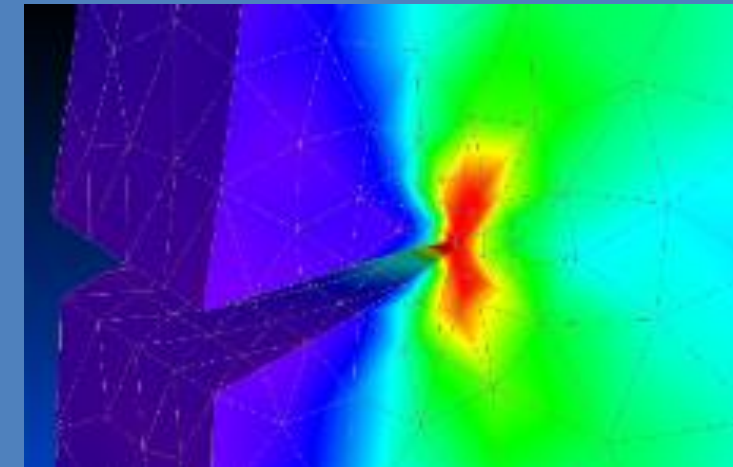
WELDS ON BRACKETS:

- Real case analysis.
- FEM, Reliability analysis, Inspections and Consequences.



▪FEM SIMULATION:

Study of crack growth: Direction and rate (S-N curves)



▪RELIABILITY:

- Probability of failure
- Sensitivity analysis: Importance of parameters.
- Data retrieval: Get from production By other means

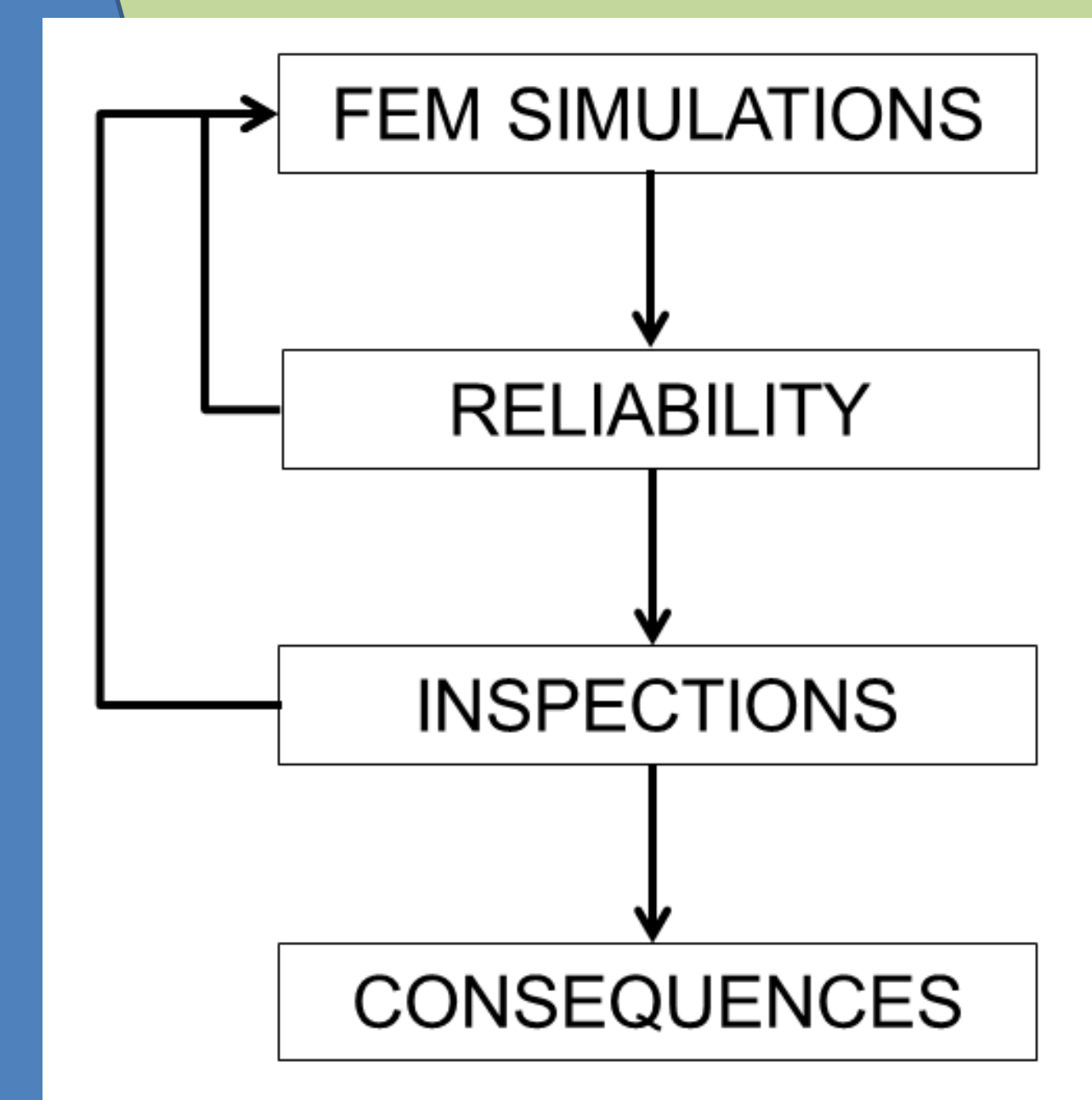
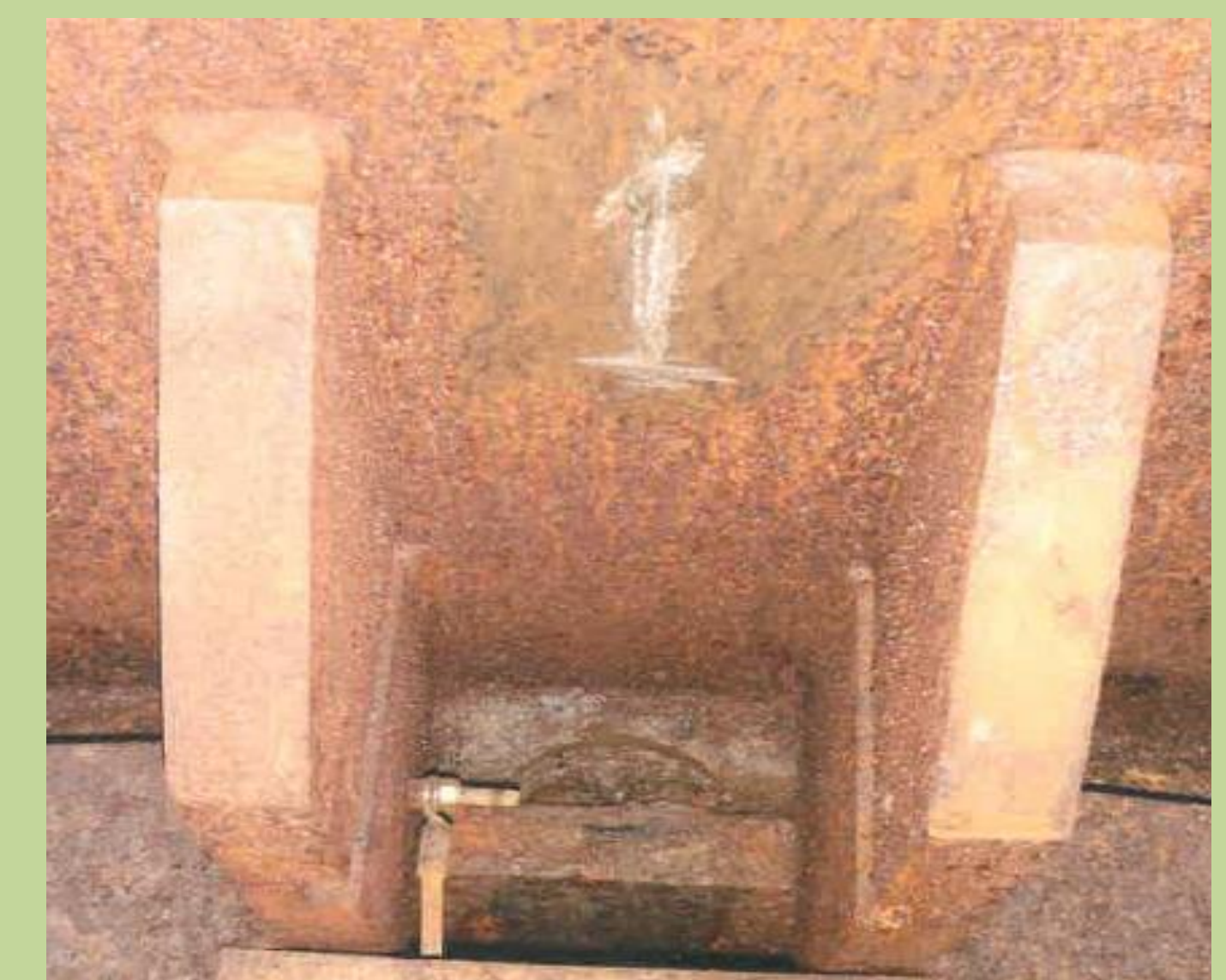
▪INSPECTIONS:

- Detect the most critical wind turbines and brackets to inspect.
- Estimate the probability of detection curves.
- Retrieve physical parameters.



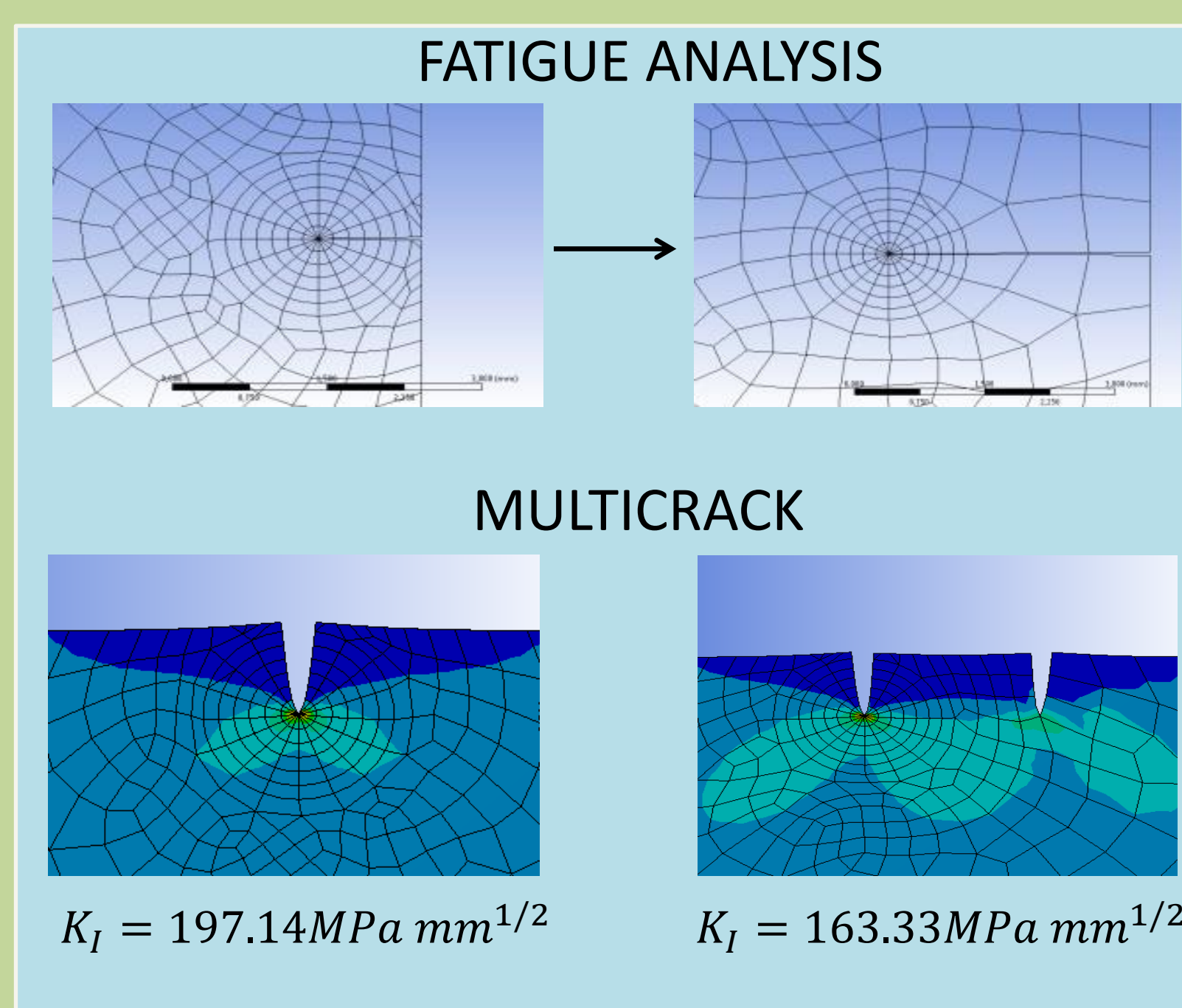
▪CONSEQUENCES:

- Uncritical failure.
- Critical Failure .



JACKETS FOUNDATION:

- Future designs.
- FEM, Reliability analysis, Inspections and Consequences.



Understand the physics.



Life expectancy.



Inspections: When and where.



Consequences of failure.



Parameters for future designs.

