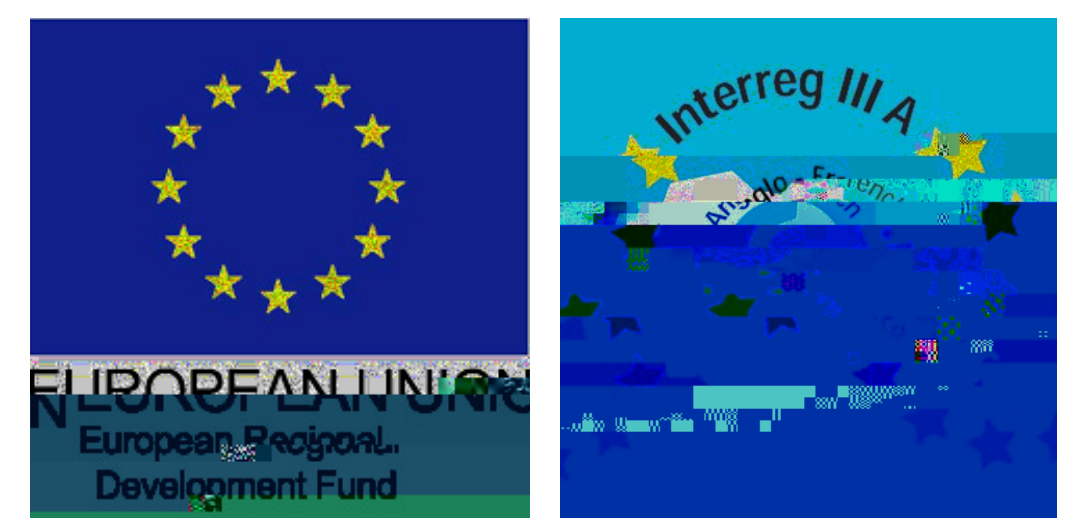


MODELLING OF CAVITATION FLOW IN A DIESEL INJECTION NOZZLE

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A model of hydrodynamic cavitation

A model for the parameter n has been derived to meet the similarity criterion:

$$C \sqrt{n}/D \text{ idem}$$

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Conclusions

- A homogeneous-mixture model of cavitation flow, based on the theory of bubble dynamics, has been extended in order to describe the liquid quality and viscous shear stress effects on cavitation flow.
- Assuming hydrodynamic similarity of cavitation flows, an algebraic model for the number density of active cavitation nuclei is suggested.
- The influence of viscous shear stress on cavitation flow has been clarified, and described in the model for the cavitation pressure threshold.
- The model was adjusted to describe sub-cavitation and super-cavitation flows in real-scale models of diesel injectors.