

### Authors' Closure

The authors would like to thank the discussor for his remarks. In recent investigations, G. Poll et al. (1992), we were indeed able to observe indications of cavitation in the fluid film of the sealing contact. As the measurement of the film thickness, using a magnetic fluid, detects the volume of the fluid and averages over an area larger than the cavitation spots, it is not possible to distinguish between cavitation and other effects:

- If cavitation should occur while the distance between the surfaces remains constant, it would appear as if the film thickness was decreasing.
- If cavitation should occur while the surfaces become further separated, it would appear that too small an increase or even a constant film thickness is indicated.

Both conclusions about film thickness would be affected by

error, which is indeed a shortcoming of this method, as for most others. Furthermore, because of the averaging character of the measurements and the induced alteration of the film thickness, we see no possibility of correlating dynamic fluctuations of the measuring signal to cavitation.

On the other hand, it should be considered that the calibration of the transducer in a dynamic condition similar to that of the application, see section 6 of the paper, should provide a fairly good compensation for the effect of uniformly distributed cavities or air bubbles present in the magnetic oil volume of the fluid film gap.

### Additional Reference

Poll, G., Gabelli, A., Binnington, P. G., and Qu, J., 1992, "Dynamic Mapping of Rotary Lip Seal Lubricant Film by Fluorescent Image Processing," 13th International Conference on Fluid Sealing, Brugge, Belgium.