

## Penalization for viscous flow around a porous thin layer

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### SUMMARY

We study a penalization method used to compute the flow of a viscous fluid around a thin layer of porous material. Using a BKW method, we perform an asymptotic expansion of the solution when a little parameter, measuring the thickness of the thin layer and the inverse of the penalization coefficient, tends to zero. We compare then this numerical method with a Brinkman model for the flow around a porous thin layer.

**Keywords:** penalization method, porous thin layer, viscous fluid, convection-diffusion equations

**AMS Classification:**

### References

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