

# Porous media equation in tubular domains: large time behaviour of solutions

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This is a report of our developments on large-time behaviour of solutions of the porous media equation  $\partial_t u = \Delta u^m$ ,  $m > 1$ , posed in infinite tubular domains and their certain subdomains. For the homogeneous Cauchy–Dirichlet problem with initial data that have one-sidedly bounded support it is shown that there is a universal pattern of convergence to a self-similar solution. Moreover, the large-time behaviour of the free boundary in every solution mimics that of the self-similar one. The results complete and enlarge earlier results of [2] and [3].

Joint work with B.H. Gilding, Department of Mathematics, College of Science, Kuwait University.

## REFERENCES

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