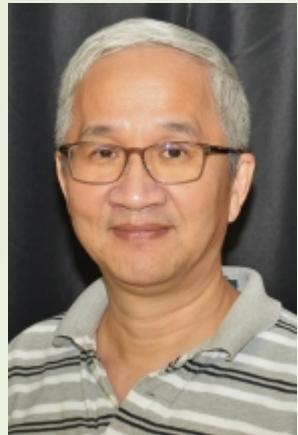


# FLUX RECOVERY AND SUPERCONVERGENCE OF QUADRATIC IMMersed INTERFACE FINITE ELEMENTS



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Abstract. We introduce a flux recovery scheme for the computed solution of a quadratic immersed finite element method. In the case of piecewise constant diffusion coefficient, we show that the end nodes are superconvergence points for both the primary variable  $p$  and its flux  $u$ . Furthermore, in the case of piecewise constant diffusion coefficient without the absorption term the errors at end nodes and interface point in the approximation of  $u$  and  $p$  are zero. In the general case, flux error at end nodes and interface point is third order.