

# ON THE 2-DIMENSIONAL JACOBIAN CONJECTURE AND AFFINE VARIETIES CONTAINING $\mathbb{C}^2$

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**Abstract.** The two-dimensional Jacobian Conjecture is equivalent to the non-existence of a map of complex varieties  $f : V \rightarrow \mathbb{C}^2$  where  $V$  is an affine variety properly containing  $\mathbb{C}^2$  as an open subvariety,  $f$  restricted to  $\mathbb{C}^2$  has constant non-zero Jacobian determinant,  $V - \mathbb{C}^2$  is a (possibly singular) rational curve whose normalization is  $\mathcal{C}^1$ , and  $V$  admits a map to  $CP^1$  making it a  $\mathcal{C}^1$ -bundle over  $CP^1$ . We show the non-existence of such a map  $f$  for a large class of such affine varieties  $V$ .

## References

1. David Wright *Affine surfaces fibered by affine lines over the projective line*, Ill. Jour. Math., vol 41, No. 4, Winter 1997, 589–605

