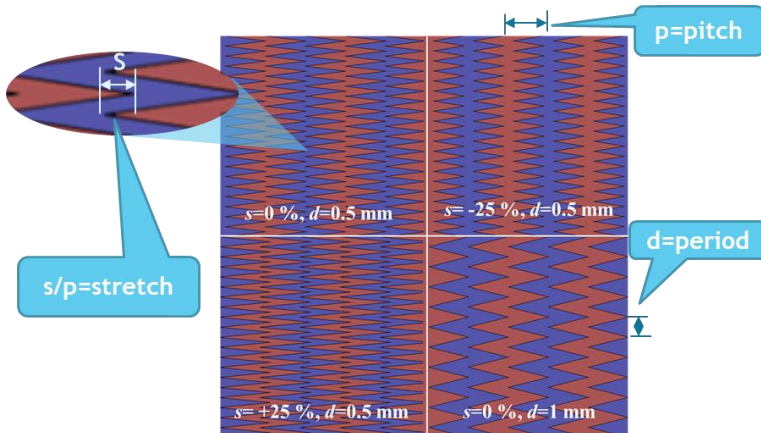


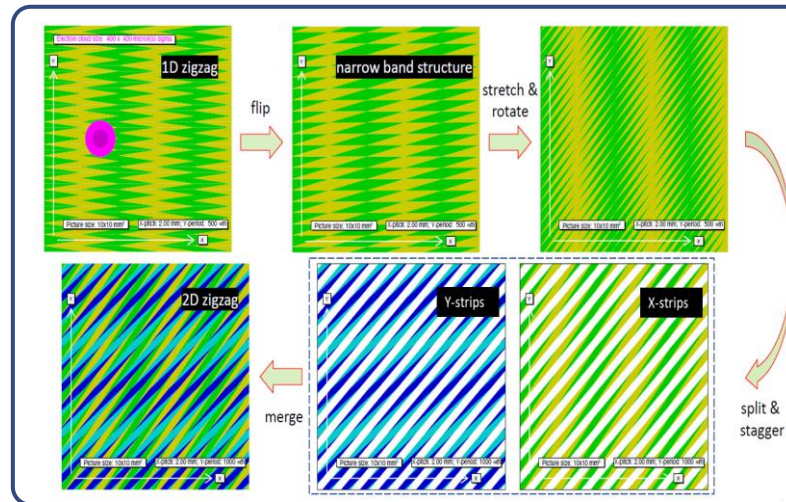
# 2D Interleaved Readouts for MPGDs

**Introduction:** Once the geometric parameters of interleaved anodes (such as zigzags) are precisely tuned for a specific detector application, coarsely segmented (pitch > 1 mm) strip arrays maintain high position resolution, a uniform detector response, do not require correction functions, and minimize the readout channel count.

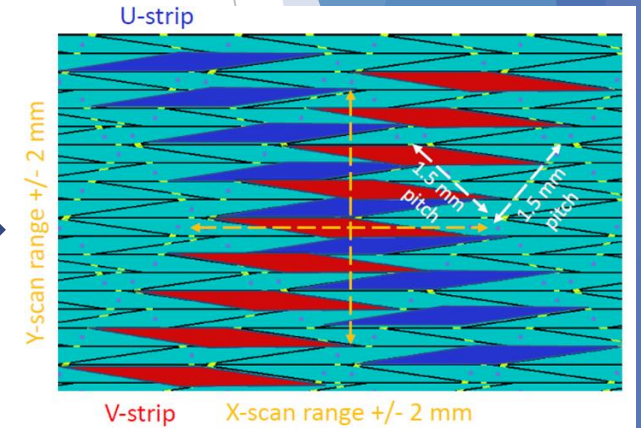
1D ZZ patterns



Interleaved anodes can be extended to the 2D case



2D ZZ pattern



## Summary

- We have shown that 2D interleaved anode structures can be constructed by a relatively simple rearrangement of the 1D zigzag diamond-shaped elements
- The resulting 2D patterns with relatively coarse pitch are capable of producing excellent position resolution and a relatively uniform detector response both in a lab and beam test setting for both GEM and  $\mu\text{RWELL}$  (so far)
- While the 2D designs investigated did show a relatively small DNL, we expect this contribution to the overall resolution will be significantly minimized once the anode parameters are optimized, as was demonstrated for the 1D case

