

## Color Changing Bidirectional Tube

This pattern has been studied extensively with initial studies by S. Guest, S. Pellegrino, and B. Kresling. The color changing version was shown by origami artists Tomoko Fuse and Robert Lang.

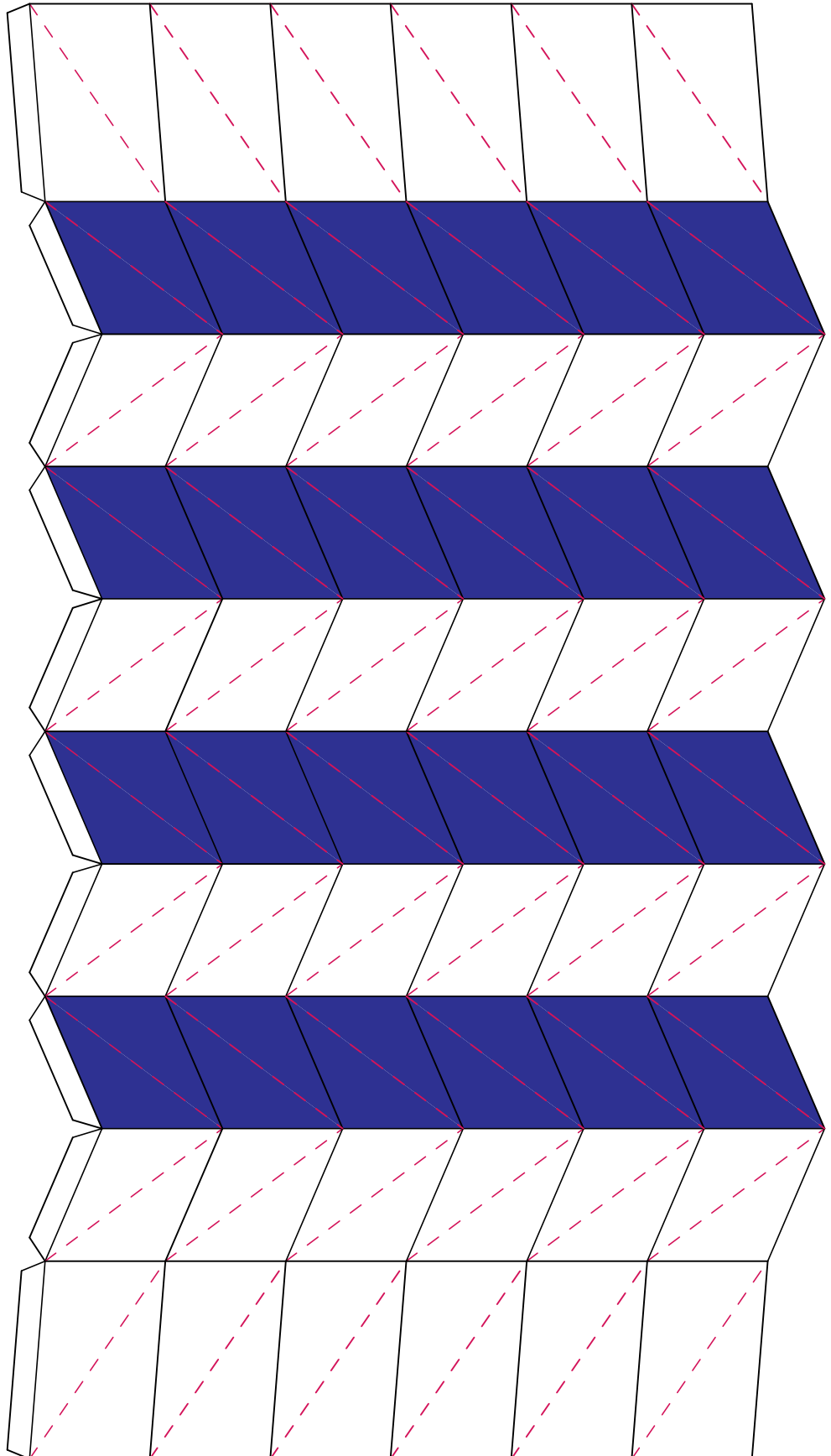
Variations of the pattern has also been used in origami-based engineering applications by researchers at BYU. To learn more, visit [cmr.byu.edu](http://cmr.byu.edu) or look at the citations below.

Cut out, fold, wrap into a tube and tape or glue tabs to far side.

For better results, prescore the folds by running over them with a blunt object such as a ballpoint pen.

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Mountain Folds

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Valley Folds



Butler, Jared, et al. "Highly compressible origami bellows for harsh environments." ASME 2016 IDETC. ASME Digital Collection, 2016.

Sargent, B, et al. "An Origami-Based Medical Support System to Mitigate Flexible Shaft Buckling (in review)" ASME Journal of Mechanisms and Robotics, 2019.

Sargent, B, et al. "Deployable bellows for delivery of a flexible, elongate device and methods of use" US Patent US20190269885A1