

# A Multi-Layer Topologically Reconfigurable Broadcast-and-Weight Photonic Neural Network

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*Abstract*—Broadcast-and-weight (BaW) photonic neural networks can process high-bandwidth signals with limited chip area, but they traditionally lack topological reconfigurability. We propose using a fully-connected *recurrent* BaW system as a topologically reconfigurable network and demonstrate a multi-layer feedforward network implemented on such a system.

## I. INTRODUCTION

