

# **Abstract**

**Moustafa Hussein Aly**

## **Optical Frequency Multiplication for Up-Converting Frequencies of RF Signals for Radio over Fiber Applications**

When a link fails in an IP network, the network re-converges to redirect the traffic away from the failed link. IP fast reroute is used to minimize the time taken to redirect the traffic to an alternate path. Multiple routing configurations (MRC) is the IP fast reroute scheme under consideration. In this paper, we will discuss how to minimize the impact of the MRC recovery process on the post failure load distribution over network links. Two techniques used to achieve a good load distribution across links after failure are compared. The first technique utilizes manual link weight manipulation with MRC. The second technique is the modified MRC. Both advantages and disadvantages of the two techniques are discussed.