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Probing particle acceleration and transport through behind-the-limb gamma-ray Solar flare observations

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Observations of greater than 100 MeV gamma-ray emission from solar flares from active regions located behind the visible solar disk pose interesting questions regarding the acceleration sites and mechanism, the transport and interaction points of the accelerated particles during these events. Two of the most popular scenarios to explain these observations are (a) acceleration at the coronal mass ejection (CME)-driven shock with back precipitation to the solar atmosphere and (b) trapping of flare-accelerated ions in extended coronal loops or additional acceleration and release into the loop. In this talk I will discuss the most recent results from the Large Area Telescope onboard the Fermi Space Telescope that show evidence in support of both of these scenarios during behind-the-limb solar flares.

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