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Specification of the broad shell of dense plasma for halo CMEs

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Full halo CMEs are bright clouds surrounding the entire Sun and propagating outward from it in all directions, and interpreted as broad shell or bubble of dense plasma ejected in the front side or back side of the Sun. To determine the orientation of the central axis, the angular width and the radial propagation speed for a frontside full halo CME, the broad shell of dense plasma for the CME must be specified. Based on the models that are used to approximate the broad shells of dense plasma, i.e., the conical shell, the spherical shell [Howard et al., 1982], and the ice-cream cone [Fisher and Munro, 1984], we produce corresponding shapes of frontside full halo CMEs. By comparing the calculated shapes with observed one, the broad shell of dense plasma for a specific full halo CME may be identified, and the geometrical and kinematical properties for the CME can be determined.