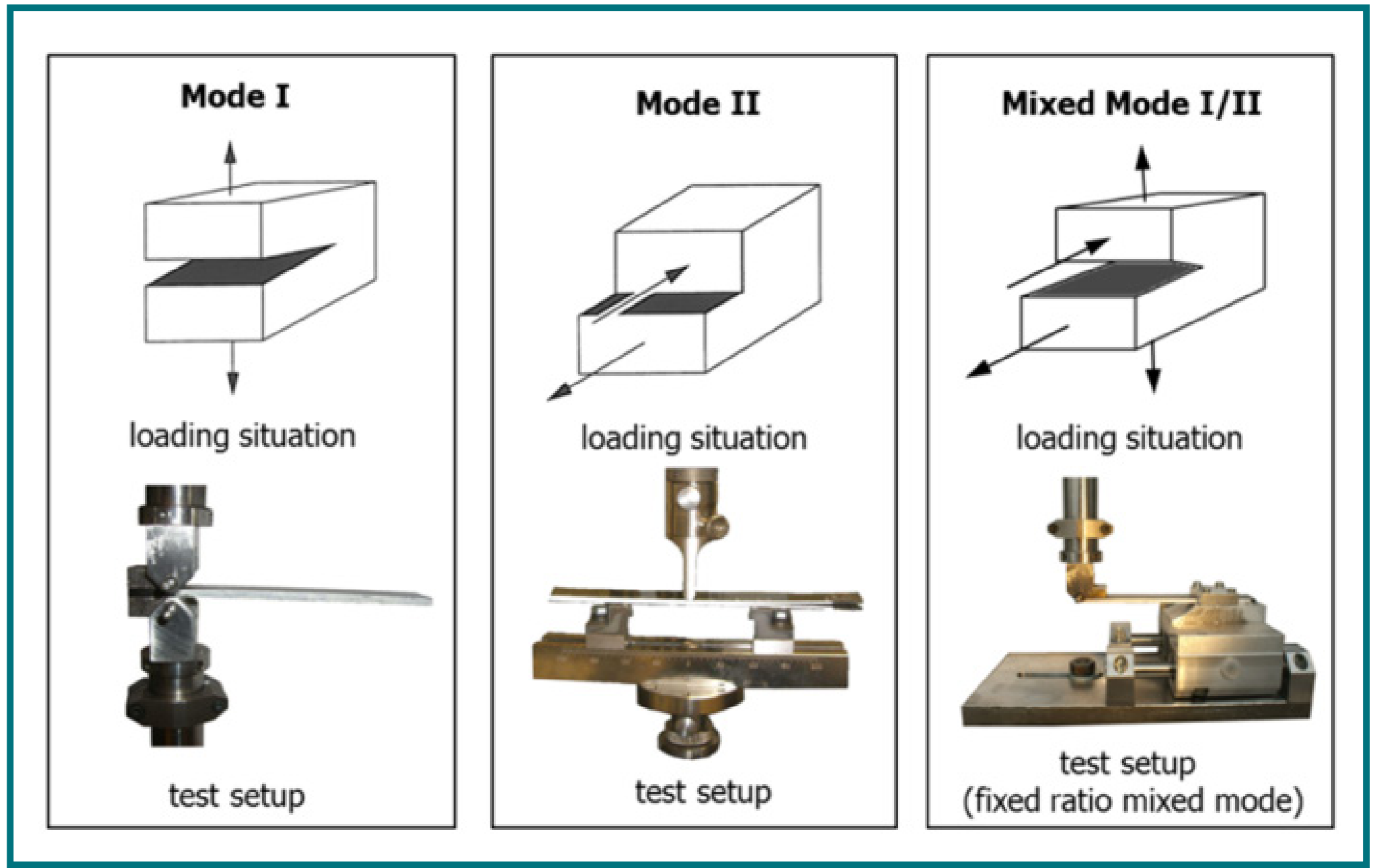


Delamination in Composites

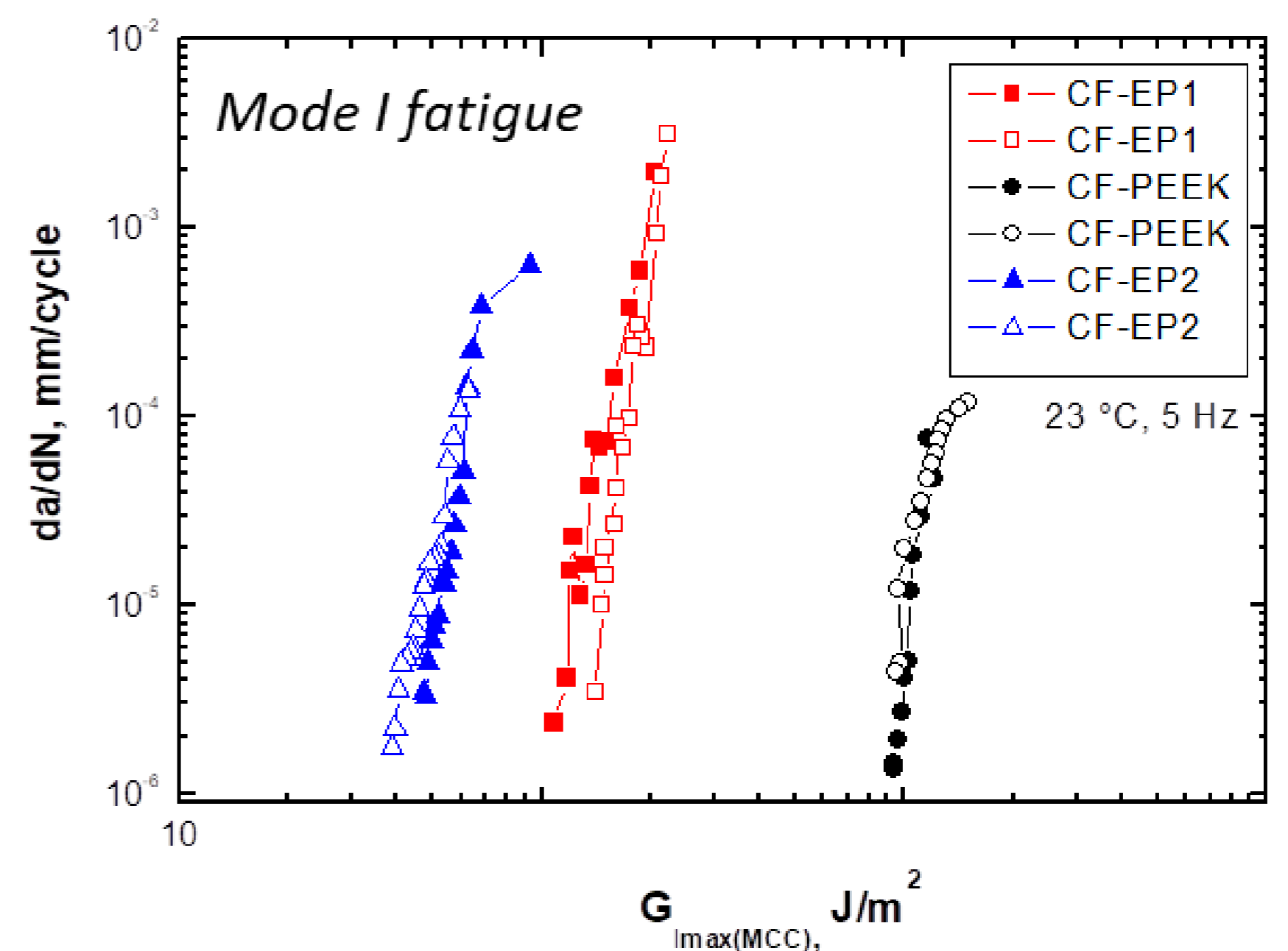
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Because of their layered structure, delamination is a common problem occurring in continuously fibre reinforced polymer (FRP) composites. Yet, there are no standards dealing with the fatigue delamination growth in composite materials. Therefore the fatigue delamination behavior of composites has been investigated under various loading conditions. Round robin exercises were carried out to evaluate the potential of fatigue delamination tests for standardization. The test campaigns were conducted within subcommittee D30.06 of the American Society for Testing and Materials (ASTM) and committee TC4 within the European Structural Integrity Society (ESIS).

The tests were carried out on various carbon fiber reinforced epoxy composites, glass fiber reinforced epoxy composites and carbon fiber reinforced thermoplasts. The results revealed the reproducibility and inter-laboratory scatter and also highlighted the limits of fatigue delamination tests.



Fatigue crack growth rates for carbon fibre reinforced epoxy (EP) and PEEK laminates



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