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The array model of the faceted bicrystal Josephson junctions has been developed more comprehensively. The facet size and the facet critical current dependence on magnetic field are taken into consideration. The model can be successfully used with high-performance software meant for numerical simulation of the lumped Josephson junction circuits, e.g., PSCAN, WinS. The based on the model results for critical current dependence on applied magnetic field are compared with experimental data for the bicrystal junctions fabricated by sputtering at high pressure. Impact of the non-sinusoidal Josephson current-phase relation on the dc interferometer critical current as a function of magnetic field is analyzed as well.

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