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Gas gain and secondary processes in Ne – N₂ mixtures – concentration and pressure scaling.

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In the present work, the gas gain curves have been measured in the range from the ionization chamber regime to the breakdown limit in Ne – N₂ gas compositions (2 – 20% N₂, also in pure Ne) at various mixtures pressures (50 – 1800 hPa).

The measured gas gain curves have been fitted to the Diethorn, Williams & Sara and of Aoyama gain models to determine the characteristic mixture constants like effective ionization potential or mean ionization free path. The possible relation between these parameters and the mixture pressure and N₂ – concentration will also be discussed. The secondary processes related to electron avalanche development have been also investigated.

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