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maria emilia caballero* (mariaemica@gmail.com), Instituto de matemáticas Circuito Exterior, Ciudad Universitaria, Coyoacan 04510, Mexico, **adrian González casanova**, Mexico, and **jose luis perez-garmendia**, Mexico. *The ratio of two continuous state branching processes with immigration*. Preliminary report.

We study the ratio of two different continuous-state branching processes with immigration whose total mass is forced to be constant at a dense set of times. These lead to the definition of the Λ -asymmetric frequency process (Λ -AFP) as a solution of to an SDE. We prove that this SDE has a unique strong solution which is a Feller process. We also calculate a large population limit when the mass tends to infinity and study the fluctuations of the process around its deterministic limit. Furthermore, we find conditions for the Λ -AFP to have a moment dual. The dual can be interpreted in terms of selection, (coordinated) mutation, pairwise branching (efficiency), coalescence, and a novel component that comes from the asymmetry between the reproduction mechanisms. (Received February 16, 2021)