# Compactification of moduli spaces of connections and Okamoto–Painlevé pairs

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**Abstract:** Okamoto introduced the space of initial conditions by resolution of the singularities of the foliations defined by the Painlev equations. The space of initial conditions has nice compactifications. The pair of the compactification and the boundary divisor is called an Okamoto–Painlev pair. On the other hand, we have another approach to study the Painlev equations. This is isomonodromic approach. It is expected that we may construct Okamoto–Painlev pairs from this point of view. Indeed, Inaba–Iwasaki–Saito constructed a nice compactification of the moduli space of SL(2)-connections over the projective line with 4-regular singularities. They showed that this compactification gives the Okamoto–Painlev pair of Painlev VI. The subject of this talk is attempting to generalize Inaba–Iwasaki–Saitos compactification. That is, we try to construct compactifications of the moduli spaces of SL(2)-connections over the projective line admitting (generic unramified or generic ramified) irregular singularities. This talk is based on joint work in progress with Michi-aki Inaba.