Eine Woche, ein Beispiel
9.4 Hecke algebra

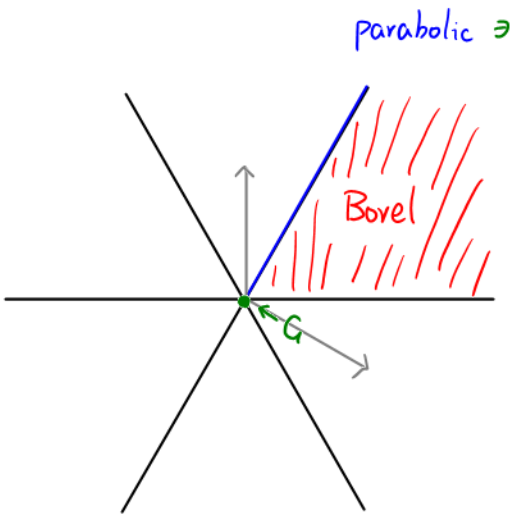
This document is not finished. I need some time to digest and restate them.
I saw Hecke algebras in many different fields(modular form/p-adic group representation/K-group/...), and I want to see the difference among those Hecke algebras.
main reference:
[Bump][http://sporadic.stanford.edu/bump/math263/hecke.pdf]

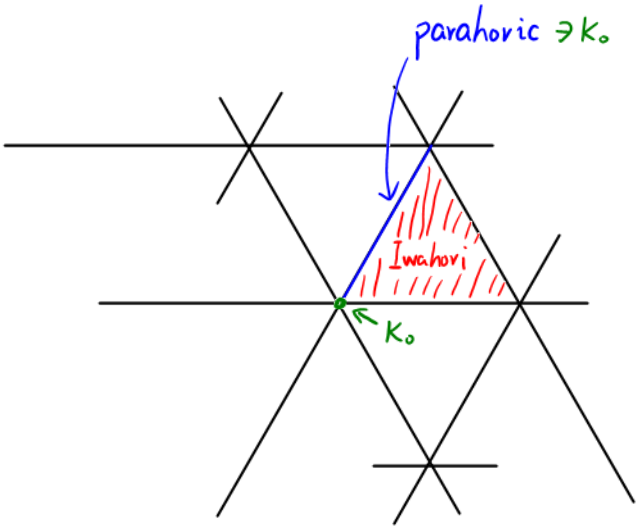
Task. For each double coset decomposition, we want to do.

1. decomposition ($\&\ \Gamma t\Gamma/\Gamma$ is finite)
2. $\mathbb{Z}$-mod structure, notation
3. alg structure
4. conclusion

https://math.stackexchange.com/questions/4480285/what-is-the-kak-cartan-decomposition-in-textsld-mathbb-r-in-terms-of

	Bruhat	Iwahori affine Bruhat	Cartan Smith normal form
F finite	$G=\coprod_{w\in W} BwB$		
F local	$G=\coprod_{w\in W} BwB$	$G=\coprod_{w\in W_{ext}} IwI$	$G=\coprod_{t\in T^-} K_0 t K_0$
F global	$G=\coprod_{w\in W} BwB$		$GL_2^+(\mathbb{Q})=\coprod_{t\in T^-}\Gamma t\Gamma$
adèle?			





$$B=\begin{pmatrix}*&*&*\\&*&*\\&&*\end{pmatrix}=\begin{pmatrix}*&*&*\\&*&*\\&&*\end{pmatrix}\cap\begin{pmatrix}*&*&*\\*&*&*\\&&*\end{pmatrix}$$

$$P=\begin{pmatrix}*&*&*\\*&*&*\\&&*\end{pmatrix}$$

$$I=\begin{pmatrix}\mathcal{O}&\mathcal{O}&\mathcal{O}\\\mathfrak{P}&\mathcal{O}&\mathcal{O}\\\mathfrak{P}&\mathfrak{P}&\mathcal{O}\end{pmatrix}=\begin{pmatrix}\mathcal{O}&\mathcal{O}&\mathcal{O}\\\mathcal{O}&\mathcal{O}&\mathcal{O}\\\mathcal{O}&\mathcal{O}&\mathcal{O}\end{pmatrix}\cap\begin{pmatrix}\mathcal{O}&\mathfrak{P}^{-1}&\mathfrak{P}^{-1}\\\mathfrak{P}&\mathcal{O}&\mathcal{O}\\\mathfrak{P}&\mathcal{O}&\mathcal{O}\end{pmatrix}\cap\begin{pmatrix}\mathcal{O}&\mathcal{O}&\mathfrak{P}^{-1}\\\mathcal{O}&\mathcal{O}&\mathfrak{P}^{-1}\\\mathfrak{P}&\mathfrak{P}&\mathcal{O}\end{pmatrix}$$

$$P=\begin{pmatrix}\mathcal{O}&\mathcal{O}&\mathcal{O}\\\mathcal{O}&\mathcal{O}&\mathcal{O}\\\mathfrak{P}&\mathfrak{P}&\mathcal{O}\end{pmatrix}$$